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ORIGINAL ARTICLES.

THE OSTEOPLASTIC RESECTION OF THE FOOT, as Devised by Wladimiroff and Miculicz.

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One of the characteristics of aseptic surgery is conservatism; this is especially seen in the hesitancy with which, in certain cases, modern surgeons resort to amputations, and in their endeavors to devise less mutilating operations. At the present day joints are excised, partially or totally, and portions of the tarsus or carpus are removed in cases where, in former days, nothing short of an amputation would have been thought of.

The osteoplastic resection of the foot has lessened, and is destined still further to lessen, the number of cases in which amputation of the foot above the malleoli is called for. The operation is indicated when the soft or osseous structures of the heel are destroyed so extensively that there is not sufficient skin or bone left on which the weight of the body can rest. It will thus be had recourse to in certain cases in which Pirogoff's operation or Sédillot's *évidement* cannot be performed, *e. g.*, where there is tuberculosis of the body of the os calcis, with or without fistulous openings, or where there is extensive loss of cutis on the heel. In such cases Pirogoff's operation is impracticable; for to be successful, the posterior half-inch or inch of the calcaneum must necessarily be healthy, and the skin of the heel must be reasonably well preserved. Cicatricial tissue, as is known, is of low vitality; it is unable to endure the pressure and friction incident to walking; it is thinned by "usure," becomes necrotic, and the omnipresent pus microbes gain admittance to the denuded tissue.

Sédillot's *évidement* also has its limitations. Where the operation leaves large cavities, in a patient older than 10 years, the cavities will, as a rule, never fill with bone. If the greater part of the spongy substance of the calcaneum be removed with a gouge; if, as Sédillot says, a mere shell of bone be left, the calcaneum will, in many instances, be unfit to walk upon; it is too weak, its spongy substance is but imperfectly reproduced. In such cases the only operation by which, formerly, the patient could be relieved, was amputation above the malleoli.

In 1872 a Russian surgeon, Wladimiroff, read before the Medical Society of Kasan, Russia, a paper on several new osteoplastic operations which he had performed on the lower extremity. Among them he described an operation by which he formed, according to his phraseology, an artificial *pes equinus*. He had had a case where there was chronic destructive disease of the astragalus and calcaneum, with loss of skin on both sides of the lower astragalus joint. The cuboid, scaphoid and remaining bones of the foot were sound. Being desirous of having the patient walk on his foot, of preserving the sound parts of the member, and of obtaining a clean wound which would be likely to heal by first intention, he conceived of the following operation, which he carefully studied and practised on the cadaver:[1] He removed the astragalus and calcaneum with the skin covering the heel, and united the cut surfaces of the scaphoid and cuboid bones with the tibia and fibula; the last two bones he cut just above the malleoli. Wladimiroff operated March 2, 1871, and published the case on February 11, 1872. He stated that his patient, a boy of 15, could walk without a cane, and that he walked well with a cane. As this case was published in the Russian language, it was almost as good as lost to the medical profession in all countries except Russia.

In 1881 Miculicz, of Vienna, having no knowledge of Wladimiroff's case, devised an operation similar to, or rather identical with that of the Russian surgeon.[2] As the profession became acquainted with the operation through Miculicz, his name has been attached to it. At the Eighth International Congress in Copenhagen, however, Professor Sklifossoffsky, of Moscow, stated that Miculicz's operation had been known in Russia for some years past, and that the idea of forming an artificial pes equinus was due to Wladimiroff. Miculicz's case is as follows:

A man of 22 years suffered from a serpiginous ulcer which, destroying the skin, had extended from the malleoli around the heel to the anterior half of the sole of the foot. The skin on the dorsum of the foot remained intact. Miculicz incised the ankle joint, removed the astragalus and os calcis with the integument, and sawed a disc off the scaphoid and

[1] Fischer, Zur osteoplastishen Resection des Fusses durch Wladimiroff-Miculicz. Deutsche Zeitschrift für Chirurgie. Bd. 23, p. 162.

[2] Miculicz, Eine neue osteoplastische Resectionsmethode am Füsse. Archiv für klinische Chirurgie, Langenbeck, 1881. Bd. 26, Heft. 2, p. 494

cuboid bones. The steps of the operation were as follows: An incision was made across the sole of the foot from the tuberosity of the scaphoid to a point a little posterior to the tuberosity of the fifth metatarsal bone. From the ends of this incision he cut upwards and backwards on both sides of the foot as far as the malleoli, and made a fourth incision between these two points posteriorly to the joint. He then disarticulated at the ankle, cutting from behind, and brought the foot into dorsal flexion; the astragalus and os calcis were detached from the soft parts on the dorsum of the foot and Chopart's joint opened from above. Having obtained with a saw cut surfaces at the ends of the tibia and fibula above the malleoli, and cut surfaces at the posterior parts of the cuboid and scaphoid bones, he brought these surfaces into apposition, and thus placed the foot in the position of a pes equinus. The wound healed in two months. In four months his patient walked without a cane in a boot constructed for the purpose. A few weeks later he walked without the boot and was able to bear his whole weight on the resected foot.

In order to illustrate the operation I will give the history of my case, and later I will discuss the indications for the operation, the method of performing it, and its results:

Synopsis.—Traumatic injury to the right heel resulting in chronic progressive osteo-myelitis and periostitis of the os calcis and the talus of ten years' duration. Osseous ankylosis of posterior talus joint and of Chopart's joints, fibrous ankylosis of ankle-joint. Ulcerative destruction of the skin on the posterior surface of the heel. Repeated local operations on the calcaneum without permanent benefit. Abscess and subsequent intractable fistulas on the dorsal side of the talus, leading to diseased bone in the sinus tarsi. Osteoplastic resection of the foot in accordance with Miculicz's description. Consolidation of the foot in good condition. No relapse of the disease in the bone; forcible extension of the toes into the equinus position. Rupture of skin at the base of the first phalanx of the hallux. Subsequent inflammation of the scar. Excision of the scar and transplantation of skin from the planta pedis. Healing by first intention. Patient is able to walk without cane, and can bear the whole weight of his body on right foot.

Christian Jebsen, æt. 28, laborer, gives the following history: *His father* was troubled for many years with annually recurring attacks of facial erysipelas; his mother suffered from a chronic pulmonary disease and varicose ulcers of the left leg. Patient's health was good up to his 18th year. At that time patient followed the occupation of a sailor. On board ship he received an injury in his right heel from a pointed iron rod which was thrown at him by the captain of the vessel. The point of the rod entered the os calcis posteriorly and passed forward and downward for about one-half inch. The wound suppurated one year, during which time patient was in poor health. He was confined to his bed most of the time. Two months after closure of the wound the cicatrix opened; this, together with swelling and tenderness around the os calcis and its articulations, rendered patient an invalid for three years. The wound again healed, and swelling and tenderness diminished so far as to enable patient to wear a boot and to walk without suffering much pain. Six months later a sinus showed itself, through which a probe could be passed into the bone. This sinus closed after several months. Patient then came to America. He had been here but five months when again a fistula began to discharge. In 1883 he was admitted to the Cook County Hospital, where the sinus and a cavity which was found in the posterior part of the os calcis, were scraped with a sharp spoon and gouge. In three months the cavity filled and the wound closed. Patient was discharged in November, 1883. He was able to walk some, but movements of the foot were limited and painful. Swelling and tenderness remained. In the spring of 1884 he returned to the hospital with a running sinus. Dr. Verity removed part of the os calcis, excised the cicatrix and united the skin over the remainder of the bone. The wound did not heal; six months after the operation an abscess formed on the dorsum of the foot over the astragalus.

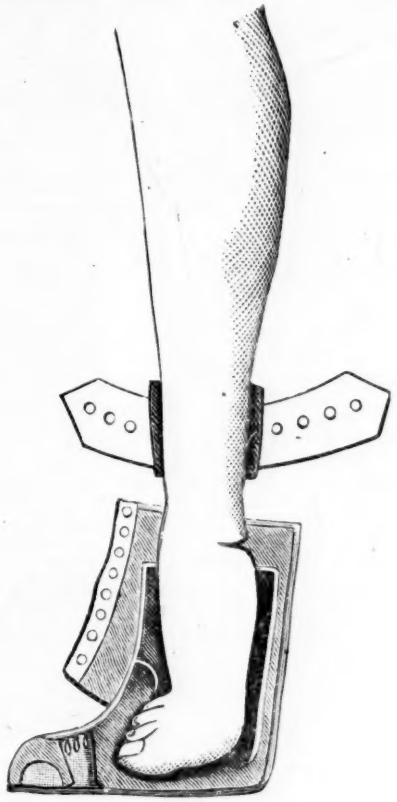
Patient now passed into my care. I found him pale and poorly nourished; lungs, heart and abdominal organs healthy; urine normal. The right foot was fixed in plantar flexion at an angle of about 30°. There appeared to be complete ankylosis in all the joints from the ankle to Chopart's articulation. On the posterior and inferior surfaces of the heel there was an adherent cicatrix, roundish in shape and about 1½ inches in diameter. The centre of this cicatrix presented a granulating spot where a probe could be passed to the roughened surface of the calcaneum. The soft parts around the ankle and on the dorsum of the foot were swollen and indurated. An abscess on the dorsal side of the astragalus was opened and about a tablespoonful of pus evacuated. The probe discovered roughened surfaces of bone in the sinus tarsi. I drained the abscess, placing a tube transversely behind the flexor tendons; scraped the granulating spot on the heel and applied an iodoform dressing. The wound was treated for four months with injections of tincture of iodine and of a solution of iodoform in ether. As the condition remained the same it became necessary to decide whether the foot should be amputated above the ankle or resected according to the method of Miculicz. The loss of skin on the heel and the diseased condition of the bone put Pirogoff's operation out of the question. As the patient wished to retain as much of his foot as possible, I determined on Miculicz's operation, which I performed upon him December 31, 1884.

After thorough disinfection of the foot and leg as high up as the knee, patient was anæthetized, turned over on his stomach, and Esmarch's elastic bandage applied. As there had been an abscess on the dorsal side of the astragalus, and as there remained considerable infiltration of the tissues around the flexor tendons and in the neighborhood of the arteria dorsalis pedis, I dared not rely upon this artery alone for the blood-supply of the foot. I desired to pre-

serve the posterior tibial artery as far down as I possibly could; at all events down to its division into the internal and external plantar arteries. I was consequently compelled to make my incisions somewhat different from those made by Miculicz. I began my internal incision in the planta, three-fourths inch from the inner margin of the sole, and three-fourths inch posterior to the tuberosity of the scaphoid. From this point I curved my knife, cutting down to the bone, backwards and upwards over the internal surface of the os calcis, below the sustentaculum tali, to the inner border of the tendo Achillis; thence upwards along the tendon to a point posterior to the ankle joint. In making my external incision I commenced one inch behind the tuberosity of the fifth metatarsal bone in the margin of the foot; I then cut upwards and a little backwards, running the incision half an inch anterior external malleolus, over the external surfaces of the processes anterior calcanei and the body of the astragalus to the ankle joint. Between the upper and lower ends of these incisions I made transverse incisions across the sole and behind the ankle joint respectively, cutting down to the bones. The superior transverse incision dividing the tendo Achillis, gave a ready access to the ankle joint. The soft parts of the dorsal flap were detached from the subjacent bones with a periosteal elevator, which was kept between the periosteum and bone in order to avoid injuring the vessels. The disarticulation at the ankle joint was accomplished with some difficulty, as a complete osseo-fibrous ankylosis was found to exist between the astragalus and the tibia. Having disarticulated, I pushed the heel downwards and further detached, with the periosteal elevator, the anterior soft parts from the astragalus. From inactivity and the proximity of a suppurative inflammation, the bones had undergone fatty atrophy (adipose osteoporosis); they were so friable as to break in or near Chopart's joint, which was completely ankylosed. The posterior parts of the scaphoid and cuboid bones were now gouged away as far as diseased; after healthy bone was reached a thin disc was sawed off each bone in order to obtain even and smooth bony surfaces. The ends of the tibia and fibula were sawed off half an inch above the joint. The sinuses that existed in the dorsal flap were scraped with the sharp spoon. Esmarch's bandage was now taken off and the hæmorrhage stopped. After this the cut surfaces of the scaphoid and cuboid were brought into apposition with the corresponding surfaces of the tibia and fibula, and held in place by means of two silver wire sutures. The wound was lightly dusted over with iodoform, the soft parts were united with deep catgut and superficial silk sutures, and the necessary drainage was provided for. The foot and leg, half way up the thigh, were enveloped in an iodoform-Lister dressing and immobilized with plaster of Paris bandages.

The soft tissues on the inner side of the foot naturally formed a bulky mass. I preferred to leave this and to allow it to undergo atrophy in the future. By diminishing its size I should have run the risk of losing important branches of the posterior tibial artery. The circulation in the distal portion of the foot was perfect; after removal of the elastic constrictor blood was seen to ooze from all parts of the peripheral side of the wound.

The wound healed (definitively) in four months. During this time a few small abscesses formed in the just-mentioned mass of soft parts on the inner side of the foot. One also appeared behind the tibia. These abscesses being promptly opened and drained, caused no further trouble.



MICULICZ S BOOT.

As the toes of the foot were fixed in semiflexion, and as they possessed but little mobility, it became necessary to effect their complete dorsal flexion in order to enable the patient to walk on the balls of the first phalanges. Two months after the operation, in June, 1885, the patient was again anæsthetized and the toes were forcibly extended, *i. e.*, flexed on the dorsum of the foot. The flexor tendons, as well as the metatarso-phalangeal joints had (from non-use) almost entirely lost their mobility; the skin covering the plantar surfaces of the joints was contracted. As a consequence of this condition the skin gave way beneath the first and second metatarso-phalangeal joints, and the first phalanx of the great toe was fractured just anterior to the joint. The wounds resulting from these ruptures of skin were irrigated with an antiseptic solution and packed with iodoform gauze. An extensive Lister dressing was put on and the dorsal flexion of the toes maintained by a plaster cast. These small wounds healed in about a month. Patient was

TABLE OF OPERATIONS.

No.	Operator.	Year.	Age.—Sex.	Disease.	Course.	Death.	Result.
1	Wladimiroff.	1871	Boy. 15.	Tuberculous caries of talus and calcaneus; tuberculous ulcers on both sides of the joint.	Recovery.		After 12 months walked well with a cane, able to walk without cane. Lengthening.
2	Miculicz.	1880	Man. 22.	Serpiginous ulcer (syphilis) on calf of leg, on heel and posterior half of plantar surface of foot. Bones and joints healthy.	Wound healed in two months.		In 4 months walks without cane and without boot. In 6 months does hard work; can walk one hour. Lengthening 1½ ctm.
3	Socin. (Reported by Burchart.)	1881	Girl. 22.	Caries.	Healed rapidly.		In 2 months walks with cane; later she works in the field; 2 years later no fistula. Lengthening 1½ ctm.
4	Miculicz.	1881	Woman. 27.	Tuberculosis of posterior astragalo-calcaneal articulation. Evidement and removal of a sequestrum of no avail.	Healing by first intention.	6 mos. later, of tub. pul.	In 2 months commenced to walk. Lengthening 1½ to 2 ctm.
5	Sklifossoffsky (Moscow)	1882	30.	Caries.	Recovery.		When reported in 1882 did not walk very well.
6	Lümniczer (Reported by Haberern).	1882	Boy. 18.	Tuberculosis of the talus, calcaneus, and malleoli and the joints from ancle to Chopart's articulation. Fistulæ and fungous ulcers on the skin of the heel. Syme's and Pirogoff's operations impossible.	Relapse of the tuberculosin in the wound.		Amputation above the malleoli; recovery 5 months after the operation.
7	Miculicz.	1883	Boy. 16.	Tuberculosis, traumatic, of the posterior astragalo-calcaneal articulation. Numerous fistulous openings through skin of heel. Evidement of cuboid and scaphoid bone at the operation.	Healing by first intention under two dressings.		In 4 months walks with boot and cane fairly well. In 6 months solid ankylosis. Can walk without boot, but must use cane. Can walk in boot without the cane. Lengthening 1½ ctm.
8	Lauenstein.	1883	Woman. 32.	Tuberculosis of the talus, calcaneus —upper posterior part—and internal malleolus. Evidement. Relapse in ankle and posterior astragalo-calcaneal articulation.	Healing of wound in three months.	8 mos. later, of tub. pul.	The stump was painless and could bear some weight.
9	Lauenstein.	1883	Man. 25.	Tuberculosis in posterior astragalo-calcaneal articulation. Evidement. Relapse in ankle-joint. Abscess in plantar side of foot.	Healing in one and one-half months.		In 2 months can walk without pain. In 3 months works as a plasterer, in boot. Lengthening 3 ctm. Five months later walks 4 hours without pain.
10	Miculicz.	1883	Man. 50.	Tuberculosis of talus and calcaneus.	Healing.		Walks fairly well with cane; no difference in length visible when he walks.
11	K. Roser.	1883		Caries.	Recovery.		Good functional result.
12	Kümmel.	1883	Woman. 38.	Tuberculosis of the calcaneus. Extirpation. Relapse. Extirpation of the talus and malleoli. Relapse.	Healing of wound; relapse four months later, removal of the rest of the tarsus, part of the metatarsus, and an additional piece of tibia and and fibula.		In 7 months after last operation can walk with a plaster cast. Lengthening 6 ctm.
13	Schattauer.	1884	Girl. 10.	Tuberculosis of ankle-joint and swelling of posterior part of the foot; fistulas below the external malleolus. Tuberculosis pulmonum incipidus; fever; emaciation.	Healing by first intention.		In 5 weeks walks in plaster cast In 5 months walks in a common shoe for hours without pain; both legs of equal length.
14	Schattauer.	1884	Boy. 9.	Tuberculosis of ankle and posterior astragalo-calcaneal articulation and along the tendo Achillis.	Relapse of the tuberculosis.		Amputation above the malleoli. Recovery.
15	G. Fischer.	1884	Girl. 18.	Tuberculosis of posterior astragalo-calcaneous articulation. Fistulas. Evidement. Relapse.	Relapse of tuberculosis after 8 months. Removal of cuboid and 2d and 3d cuneiform bone.		Six months after last operation; can walk slowly without boot. Walks well with boot and cane. Mounts stairs.
16	Ranke. (reported by W. Reussen.)	1884		Cicatricial contraction of the foot in the position of equino-valgus, subsequent to a badly treated suppurating fracture above the malleoli.	Healing in 3 months.		7½ months after the operation walks very well with boot. The leg operated upon is 3½ ctm. shorter than the other.
17	Sordina.	1885	Man. 20.	Caries of the tarsus involving the ankle joint.	Gangrene of the foot on the fourth day.		Amputation above the malleoli. Recovery.
18	Sordina.	1885	Girl. 11.	Caries of the talus. Evidement. Relapse in the talus and calcaneus. Tuberbulosis around the extensor tendons.	Healing in 7 weeks.		In 7 weeks able to walk without cane; walks almost without limping.
19	Chr. Fenger.	1885	Man. 28.	Chronic traumatic osteo-myelitis for ten years. Ankylosis of the joints from ankle to Chopart's articulation. Fistulas leading to suppurating bone in the sinus tarsi. Ulcerating cicatrix on posterior and lower surface of the heel. Evidement and plaster operations twice. Relapse.	Healing definite in 4 months. In 6 months toes dorsalflexed; 12 months after the operation plastic transplant of skin from planta healing in 4 weeks.		Fifteen months after the operation can walk without boot and cane, and bear the whole weight on the foot. Solid ankylosis. Lengthening 5 ctm.

then allowed to step on the foot. He was furnished with a boot made according to the plan designed by Miculicz, and discharged from the hospital.

He gradually learned to bear some weight on the foot. But the cicatrix on the plantar surface of the great toe, where the skin had broken in making dorsal flexion, soon began to ulcerate; either because patient's boot did not fit, or because the cicatrix was insufficient to bear his weight in walking. In January, 1886, he had an attack of facial erysipelas, for the treatment of which he returned to the hospital. After his recovery from the erysipelas I ordered him disinfected for the final trifling operation which the case required. I had his whole body shaved and sponged with a weak sublimate solution. I then excised the cicatrix beneath the metatarso-phalangeal joint of the great toe, and transplanted to the wound a flap of skin from the sole of the foot. The dimensions of the cicatrix were one inch transversely and three-fourths inch antero-posteriorly; those of the flap were three inches by one and one-half inches. The flap, which had been loosened from the plantar fascia, and to which the adipose tissue was left adherent, was united to the skin of the great toe. The wound remaining in the place from which the flap had been cut, was packed with iodoform gauze and left to cicatrize. A cicatrix thus situated could do no harm, as it would be one and one-half inches above the ball of the great toe, on which the patient must rest his weight. The flap grew to its new surroundings in two weeks, and by this time patient is beginning to walk in his Miculicz boot.

The parts which I removed by the operation were exhibited at a meeting of the Chicago Medical Society. The specimen shows the following points: On the skin covering the calcaneum is seen a cicatrix about two inches long and between one-half inch to an inch wide; it curves around the heel from below upwards and backwards, half of it being situated inferiorly and half of it posteriorly. A sagittal section through the astragalus and os calcis presents a complete osseous ankylosis between the two bones, which are separated only by the sinus tarsi. On the tibial surface of the astragalus the cartilage has disappeared and a rough osseous surface is seen, which had been united with the tibia by osseous ankylosis. The bone is found to be in the same condition on the anterior surface of the head of the astragalus and on the anterior process of the os calcis. Osseous ankylosis here also existed (at the time of the operation) between these portions of the two bones and the scaphoid and cuboid bones respectively. The latter two bones, as I stated above, were partially removed with gouge and saw. The other piece of the specimen shows the malleoli united by a thin disc of the tibia, from which subsequently an additional disc was sawed off.

I furthermore called the attention of the Society to two plaster casts which had been taken of the foot after patient had recovered. The shortened foot is seen to be in the axis of the leg, in the position of an extreme pes equinus. The dorsum of this artificial pes equinus is slightly convex; the planta is flat and almost in direct continuation with the surface of the calf. In place of the internal malleolus a bony prominence has formed, which closely resembles the malleolus; it probably grew from the periosteum of the malleolus. The mass of soft parts which was left on the inner surface of the foot, has undergone almost complete atrophy. The superficial tissues lie almost as close to the bones as on the fibular side of the foot. The external malleolus is replaced by a small process of bone; about one inch posterior to this, and half an inch inferior to it, the tuberosity of the fifth metatarsal bone may be noticed.

The first and second toes are flexed on the dorsum of the foot almost to a right angle; the third and fourth toes are flexed in the same manner, but to a less degree. We must remember that the cast was taken while patient was lying in bed; when he is in the upright position the flexion of the toes exceeds that seen in the cast.

A solid osseous union has taken place between the cut surfaces of the bones. The foot still possesses some active and passive mobility in the remaining joints of the tarsus and in the joints between the tarsus and the metatarsal bones. This mobility, however, is so limited as not to impair the necessary stability of the foot. The toes move actively, the first, second and third toe through an angle of 25°; passively the great toe can be moved through an angle of 40°, and the second and third toes through one of 80°. The circumference of the walking surface of the foot, the toes included, is 10½ inches. Across the foot this surface is three inches wide, and from before backwards, beginning at the bases of the toes, it is 1½ inches. The active mobility of the toes gives a certain degree of elasticity to the gait. Measurements of the two extremities show that the limb operated upon has been lengthened by two inches. The measurements were made from the anterior superior spine of the ileum to the lowest point of the heel on the left, and to the ball of the great toe on the right side.

Indications for the Operation.—The operation is indicated in cases in which there is an extensive loss of substance or an intractable disease of the bones and skin of the heel. In Miculicz's first case there was extensive destruction of the skin only. In four cases out of the nineteen cases published there existed tuberculous ulcers of the skin together with disease of either the calcaneum or astragalus. Of the remaining cases, in but one was the operation done for widespread destruction of bone with implication of one or more of the joints between the ankle and Chopart's articulation. In Ranke's case the bones and joints were sound, but a cicatricial contraction of the skin and malformation of the foot disabled the member.

Miculicz enumerates the indications as follows: 1. Extensive injuries of the heel and the parts surrounding it. 2. Caries, *i. e.*, tuberculosis of the astragalus and os calcis with implication of a neighboring joint. 3. Extensive destructive ulceration of the skin on the heel.[3]

[3] Miculicz. Zvei Falle von osteoplastischer Fuss-resectionnach eigener. Methode, 1883, pp. 36, 37. Centralbl. für Chirurgie, No. 1, 1884, p. 12.

As to the first indication it is to be remarked that the operation, as far as we know, has not as yet been performed in a case of acute traumatic injury of the heel.

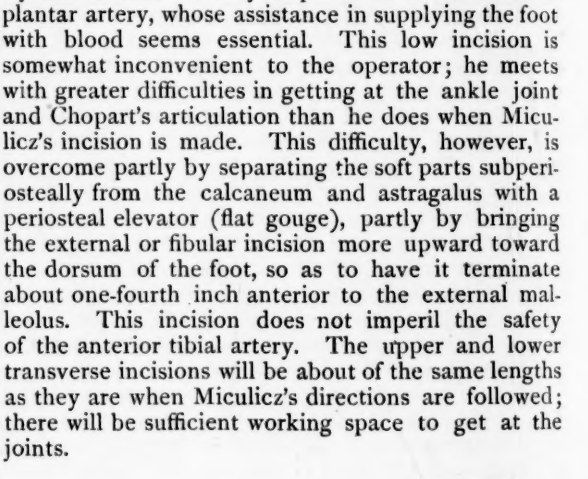
The second indication has most frequently led to the operation; it being present in thirteen out of the nineteen cases reported. As the skin of the heel was intact in these cases, the question arises whether it would not have been preferable to make an extensive atypical resection of the tarsus. The latter operation does not alter the position of the foot; it allows the patient to walk on the planta. Opinions differ in regard to this question. Most of the older writers, as Hueter, Koenig, Czerny and Billroth, advise against resection of the tarsus. Lately, however, Kappeler in Germany and Connor in America have taken up and, in able papers, revised the subject of resection of the tarsus; both come to the conclusion that a good functional result may be obtained after removal of the tarsus, even when the operation is combined with a resection of the ankle joint, *i. e.*, with a removal of the lower ends of the tibia and fibula. It may thus be doubted whether such cases as the thirteen mentioned call for Miculicz's operation, and whether his second indication is not better met by a partial, or even a total resection of the tarsus.

Miculicz's third indication is the only one which, as appears to me, must be indisputably accepted as good. Where there is extensive ulceration of the skin covering the heel, nothing but a cicatrix will form, and a cicatrix under the heel cannot bear the weight of the body, and will always ulcerate under the pressure it is subjected to in walking. As both Syme's and Pirogoff's operations require that the skin on the posterior flap be healthy, the osteoplastic resection of the foot is the only operation by which a supra-malleolar amputation can be avoided.

If, in the course of time, the osteoplastic resection of the foot should prove superior to excision of the tarsus, to Syme's and to Pirogoff's operations, in its functional results, the indications for the operation will be viewed in a different light.

Steps of the Operation—1. Incisions.— Miculicz made a transverse incision across the sole from the tuberosity of the scaphoid to a point a little behind the tuberosity of the fifth metatarsal bone. Schattauer cut one-fourth to three-fourths inch anterior to this, running his incision over the cuneiform and cuboid bones. From the ends of the transverse cut incisions were made on the tibial and fibular sides of the foot, upwards and backwards as far as the malleoli, between which two points the knife was carried around the ankle joint posteriorly. The tibial incision from the tuberosity of the scaphoid to the internal malleolus inevitably divides the posterior tibial artery, or rather its plantar branches. This leaves but the anterior tibial artery to supply the foot with blood. Miculicz, before he did his first operation, doubted that the blood-supply of the foot would be sufficient. He was, however, relieved of his anxiety when, after the removal of Esmarch's bandage, he saw the cut ends of the plantar arteries bleed freely. As I said above, I likewise feared for the safety of my patient's foot, in which there existed fistulous openings, hard induration, and infiltration of the soft tissues surrounding the anterior tibial artery. That such apprehension was well founded may be seen from Sordina's case, in which, four days after the operation, gangrene of the foot necessitated its amputation. It is, therefore, necessary to preserve some branches of the posterior tibial artery. This can be done by altering the incisions of the operation in the following manner:

Instead of cutting clear across the planta, the anterior transverse incision may be begun three-fourths inch external to the tibial border of the foot. The tibial incision may then be made from this point, not upwards to the internal malleolus, but almost horizontally backwards over the tibial surface of the os calcis, below the sustentaculum tali, to a point one inch posterior to the sustentaculum; then it may be continued upwards along the tibial border of the tendo Achillis to the posterior side of the ankle joint. By this incision we may hope to save the internal plantar artery, whose assistance in supplying the foot with blood seems essential. This low incision is somewhat inconvenient to the operator; he meets with greater difficulties in getting at the ankle joint and Chopart's articulation than he does when Miculicz's incision is made. This difficulty, however, is overcome partly by separating the soft parts subperiosteally from the calcaneum and astragalus with a periosteal elevator (flat gouge), partly by bringing the external or fibular incision more upward toward the dorsum of the foot, so as to have it terminate about one-fourth inch anterior to the external malleolus. This incision does not imperil the safety of the anterior tibial artery. The upper and lower transverse incisions will be about of the same lengths as they are when Miculicz's directions are followed; there will be sufficient working space to get at the joints.



1. Miculicz's line of incision. 2. My line of incision.

2. *Disarticulation.* — The disarticulation at the ankle had better be done first. Wladimiroff disarticulated first at Chopart's joint. By beginning at the ankle we gain more room for separating the dorsal flap, with the extensor tendons and anterior tibial artery, from the neck of the astragalus. Besides, disarticulation of Chopart's joint is more readily accomplished from above than from below, on account of the process of bone which, at the *posterior tibial* extremity, projects from the inferior surface of the cuboid under the neck of the calcaneum.

3. The step in the operation following disarticulation at the ankle joint, should be the *separation of the dorsal flap from the astragalus.* This should be done subperiosteally with a periosteal elevator. By keeping close to the bone, all injury to the anterior tibial artery and to the extensor tendons is avoidable. Preservation of the extensor tendons is of importance, because active mobility of the toes facilitates walking by rendering the gait more elastic.

4. Next, the ligaments of the calcaneo-cuboid and talo scaphoid articulations are cut through from above, and the heel is removed.

5. After this the malleoli, the articular surface of the tibia and the articular surfaces of the cuboid and scaphoid bones are taken off with a saw. If the cut surfaces should be found to be diseased, more of the bone must be removed. Miculicz (case 17) made *évidement* of the cuboid and scaphoid bones; Fischer (case 15) removed the cuboid and the second and third cuneiform bones. Kümmel, in one of his cases in which there was a relapse of the tuberculosis, was compelled to remove the remainder of the tarsal bones, part of the bases of the metatarsal bones and additional pieces of the tibia and fibula. In all of these cases the functional results were satisfactory.

In case the tuberculosis extends along the sheaths of the tendons, these should be scraped with the sharp spoon; or, better, the sheaths should be dissected out with scissors and forceps (Schattauer, case 14).

6. The cut surfaces of the cuboid and scaphoid are brought into apposition with the cut surfaces of the tibia and fibula. In order to prevent dislocation of the foot and to facilitate bony union, Haberern proposed suturing of the bones. Examining the specimen of Lümniczer's case, in which the foot was amputated five months after the operation, he had found the foot dislocated forwards and rotated outwards, and one third only of the cut osseous surface in contact with each other. Sklifossoffsky united the bones with silk; Fischer with catgut; Kümmel used silk and a steel nail; in my case silver wire was employed.

That a solid osseous union may be obtained without bone suture is proved by one of Miculicz's cases (No. 7), where he made *évidement* of the cuboid and scaphoid and consequently had irregular osseous surfaces. Nevertheless, the bone suture or the nail must be regarded as valuable helps in holding the bones in exact apposition and in bringing about osseous union.

7. The soft parts are united and drainage is provided for in the usual manner. There is, however, in these cases, a peculiarity which must be mentioned. Where a considerable amount of bone is removed, the dorsal flap is so long that a large fold is formed when the foot is brought up to the tibia. A similar folding and bunching occurs at the tibial side of the wound in cases where the internal incision is made horizontally to save the posterior tibial artery, as in Sordina's case (No. 18), and in mine (No. 19). In order to prevent the formation of dead spaces in this abundant tissue and separation of the coapted bones in cases where no sutures are used, Miculicz employs deeply placed quilled sutures or Plattenvähte. These quilled sutures are undoubtedly of service in cases like Lauenstein's first case (No. 8), where he was obliged to go as high as 7 centimetres above the ankle. In ordinary cases, however, the terraced catgut suture, which is left in place for absorption, serves equally well; besides, it is less apt to interfere with the circulation than is the quilled suture. The superabundant tissue in the anterior flap gradually disappears; it atrophies from non-use.

8. Subcutaneous tenotomy of the flexor tendons of the sole was resorted to by Miculicz in order to facilitate the backward flexing of the toes. If, as in Fischer's case, the toes, before the operation, are sufficiently movable, tenotomy is, self-evidently, superfluous. In most of these cases, however, the toes will be found to be flexed and rigid, probably from non-use. As such a foot requires that the toes be flexed dorsally at least to a right angle with the foot, an operation to obtain this position must be done, and it had better be done at once, as thereby time is saved and a secondary operation avoided.

It is doubtful whether, in cases of long standing like mine, tenotomy in the planta will prevent rupture of the skin, or even a fracture through the base of the first phalanx. The latter accident was due, probably, more to stiffness of the metatarso-phalangeal joint than to retraction of the tendon. In the next case which comes into my hands, I shall perform tenotomy and then either extend the toes at once, or, at a later date, after the wound has healed, try gradual, elastic extension. It is of importance to avoid rupture of the skin and fracture of a bone; not because this latter wound does not heal readily under antiseptic dressings, but because the cicatrix will be so situated as to be subject to greater pressure in walking than any other part of the walking surface. The cicatrix will ulcerate, and this will necessitate transplanting of skin from the planta, lest the foot be useless. Such an operation should, of course, be avoided.

9. Over a heavy antiseptic dressing extending from the toes beyond the knee, a light plaster cast should be applied. This should include the knee to insure perfect immobility of the foot. Posterior (Lauenstein, Fischer) and anterior (W. Reussen, Ranke) splints have been used for the same purpose. In cases where there is danger of gangrene, splints may be preferable during the first week, on account of the ease with which they are removed, for in such cases the foot should be inspected daily.

After-Treatment.—The foot is liable to be displaced in any direction, especially in cases where the bones are not held together by sutures. Miculicz says that such displacements can be corrected as late

as four or six weeks after the operation, and that they do not compromise the final result.

A far more serious occurrence, during the after-treatment, is a relapse of the tuberculosis, either in the bones or in the soft parts, but especially in the sheaths of the tendons. The tuberculous tissue must at once be removed. That an extensive secondary operation may be done and the final result still be good, is learned by Kümmel's case. Four months after a typical Miculicz operation, Kümmel took away the tarsus, part of the metatarsus, and additional pieces of the tibia and fibula. The wound healed by first intention. In five weeks his patient was able to walk in a plaster cast, and in five further weeks he walked in a shoe for four hours without suffering any pain. In Fischer's case the tuberculosis returned eight months after the operation. He removed what remained of the cuboid and the second and third cuneiform bones. His patient walked in a boot, with the aid of a cane, in six months. It is also stated that he could walk up and down stairs. The duration of the after-treatment in the different cases, from the time of the operation to the time when the patients began to walk, was as follows: In one (13), five weeks; one (17), seven weeks; three (2, 4, 9), two months; three (2, 7, 19), four months; three (12, 15, 16), six to seven months.

Prognosis and Results.—As yet there has been no death attributable to the operation. Two patients died of pulmonary tuberculosis, one six and one eight months after the operation (cases 4 and 8). Both of these patients had walked on the foot, and, consequently, the operation may be said to have been successful. Three of the operations published were failures, as amputation above the malleoli became necessary. In two of these cases the disease relapsed (6 and 14), and in one gangrene of the foot set in (17). The patients, however, did not die.

It is thus seen that the osteoplastic resection of the foot is not attended by greater danger than the other operations in this locality. As the nineteen operations published were done with antiseptic precautions, it would, of course, be rash to conlude that the mortality of Miculicz's operation is less than that of excision of the tarsus, or of Pirogoff's or Syme's operations. The statistics of the latter operation undoubtedly owe their death-rate to pre-antiseptic surgery.

It cannot be said that the final, functional result of the operation has, as yet, been well ascertained; most of the cases were published a relatively short time after recovery from the operation, and Fischer rightly remarks that we cannot judge of its value before we have a large number of cases before us. The object of the operation is to enable the patient to walk on his foot without any pain; to enable him to bear the whole weight of his body on the walking-surface. This object was accomplished to perfection in three cases (2, 3, 13), and fairly well in nine. In this respect the results of the operation are far superior to those of supramalleolar amputations. It is Fischer's opinion that Miculicz's operation gives better results than Pirogoff's, because after the former the walking surface is at least one-third larger than after the latter, and because the toes give a certain "elasticity" to the gait. Closer comparison of the results of the two operations is as yet needed to confirm the correctness of this opinion. Miculicz did not intend his operation to take the place of Pirogoff's or Syme's, although it seems that in some of the nineteen cases reported the question might have arisen whether excision of the tarsus, or Pirogoff's or Syme's operations were not respectively indicated.

From the facts which I have collected and stated above I think it is justifiable to draw the following conclusions:

1. The osteoplastic resection of the foot, as devised by Wladimiroff and Miculicz, has a legitimate place in the surgery of the foot. It gives functional results superior to those of supramalleolar amputation.

2. Destruction of the soft parts of the heel is an indisputable indication for its performance.

3. In tuberculosis of the ankle joint with tarsus atypical excisions may be done, as advised by Connor and Kappeler, or Pirogoff's or Syme's operations. It is doubtful whether these operations, in cases permitting the choice, should be abandoned in favor of the osteoplastic resection. This question can be answered only after further observations have been made as to the permanent cure of the disease by the operation, the duration of its after-treatment and its final functional results.

4. The results so far recorded allow of a choice between the osteoplastic resection and the operations mentioned, for the purpose of determining its value as compared with that of the older operations.

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THE ETIOLOGY AND CURE OF ASTHMA.

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The work of Wilhelm Hack on the radical treatment of migraine, asthma, hay fever and other neuroses, has received very inadequate recognition in this country. By writers on hay fever he is frequently quoted in an offhand manner together with a string of other authors; so that one derives the impression that few of those who quote him have read him. And if his specialistic colleagues do not do him justice, the large class of general practitioners ignore him almost altogether. His work is—taken altogether—of even greater interest to the physician than to the specialist, and it is a deplorable consequence of specialistic exclusiveness, that the results of his work have not yet received wider recognition among us. He teaches us that the rhinoscope must forthwith be as indispensable an instrument for all physicians as the thermometer and stethoscope.

The value of Hack's discovery, that asthma nervosum is a reflex disease with, usually, the nose as a starting-point, can best be appreciated by one who himself, for many years, struggled against the disease and fumed at the utter impotence of medical art to stave off the attacks. If I, therefore, in the course of this paper, class myself among my own patients, I shall do so with the view of bringing the subject within closer range. It is foreign to my subject to consider the isolated publications, from Voltolini downward, on the dependence of asthma upon polypous growths in the nose. Such cases are infrequent enough to be almost considered curiosities (Michel, for instance, reports 135 cases of polypus without asthma); and as Hack shows, polypi have rather a tendency to prevent asthma than to cause it. It will also simplify our subject, if we omit hay fever from our consideration.

The form of asthma of which I wish to treat exclusively is that perennial form which is more or less independent of the seasons, namely: asthma nervosum, or "Essentielles Asthma" of the Germans. Some persons never get beyond a slight hint of asthma. They will from time to time make a heaving, sighing motion, or complain of præcordial fulness with or without palpitation, or of sudden drowsiness, or dream heavily at night and complain of dulness, lassitude and headache in the morning. This latter condition has many gradations, the culmination of which is nightmare. In the future we must, therefore, learn to distinguish between an incubus of gastric and of respiratory origin. Other half-asthmatics complain only of a fleeting, leaden heaviness in the limbs amounting almost to pain; the same sensation of which so many true asthmatics complain after an asthmatic night. The typical asthma nervosum is known to us all as a neurosis occurring in paroxysms.

The patient may or may not feel an aura. He will generally, towards evening, or when he lies down, or awakes in the night, begin to wheeze. This wheezing may be associated with itching in the nose, or sneezing, or coughing; the attacks last an indefinite time, and generally end with the expectoration of a transparent glassy mucus. Such patients are often free from asthma during the day. Physical and chemical irritants, such as dust, sudden changes in temperature, the inhalation of certain gases, and a long series of idiosyncrasies which we find enumerated in textbooks, can induce an attack. But the recumbent position is the most uniform exciting cause of the single paroxysms. Such patients may be free from chronic bronchitis, chronic emphysema, heart-, kidney-, intestinal- and uterine disease: hence the term "Essentielles Asthma."

When we read authors whose contributions to the study of asthma antedate the last few years, we are struck by the uniformity with which they cling to a pet theory, each of which seems to give satisfaction to its upholder. It is merely an evasion to say that asthmatic paroxysms are induced by bronchial spasms, or by hyperæmia of the bronchial lining, or by the presence of Leyden's crystals, or by phrenic spasm, or by bulbar irritation, or by exudative bronchiolitis. For any one of these presumable causes would demand a first cause, in order to merit etiological dignity.

A true etiology of asthma had therefore to be discovered, and Hack did it in the following manner: He knew, of course, of the occasional rôle of nasal neoplasms. Schäffer and B. Fränkel had also indicated that the sensibility of the nasal lining could be so heightened through chronic catarrhal conditions, as to be a starting point for reflex disturbances. Then Hack found that he could experimentally produce glottis-spasm by touching the turbinated bodies of a sensitive individual with a probe. He then reasoned as follows: A nasal mucous membrane which shows merely slight affection, and which is not deadened in its sensibility by thickening and hypertrophy, is perhaps a better surface for exciting reflexes than one which shows evident signs of disease. And if this were the case, he reasoned, then perhaps the importance of nasal reflexes had been formerly overlooked just because of the insignificant abnormities of such a sensitive nose.

The very frequency of certain conditions may have given rise to an under-estimation of their significance. And so Hack systematically examined the nose of every patient who, for whatever ailing, came within his reach. He learned to make one distinction very rapidly, namely: that what is usually termed hypertrophic nasal catarrh is a twofold condition, which in its effects is quite opposite. In the anatomically true rhinitis hypertrophica the mucous membrane is really thickened, hypertrophied through chronic inflammation. Pressure with a probe meets with a certain

unyielding resistance, and there is a purulent, crusty secretion. This form does *not* give rise to reflex disturbances.

But there is another form, a pseudo-hypertrophy, the importance of which it is Hack's merit to have pointed out. It is that transitory swelling of the cavernous tissue of the inferior and middle turbinated bodies, which has of late been so often described that I spare you a repetition. In this form the nose may either have a very dry, itchy sensation, or show copious watery secretion. Compression with a probe gives the air-pillow reaction. Such individuals show fleeting alternate or synchronous obstruction of the nasal cavities. Often, when examining the nose of patients, we notice sudden engorgements and collapse, so that Hack's term erectility is not an exaggeration. These cavernous bodies with their frequently anæmic covering form a link in certain morbid reflexes, and when this link is destroyed through operative intervention, the reflexes cease. No symptom is more frequently overlooked by patients than transitory nasal obstruction. Most patients will positively deny its existence, until it is demonstrated to them. Therefore the assurance of an asthmatic that his nose has always appeared healthy is of no value.

Other asthmatics, if conscious of nasal trouble, consider it simply concomitant with their asthma, and it is characteristic of them that they will often resist the inquiries of the physician who attaches so much importance to rhinoscopic examination and nasal symptoms, when all their trouble seems located in the chest. It is interesting to observe how such people become gradually convinced, and how uniformly they marvel at having forgotten or overlooked most constant symptoms. Only recently I succeeded in showing an asthmatic half a dozen rapid openings and closings within barely more than a minute or two.

The theory of Hack is a simple one, and although it does not cover all the ground, is a very satisfactory one. He says that the turbinated bodies become engorged through various irritants, and that this vasodilatatory disturbance is transmitted to the bronchial tubes in asthma. The turbinated bodies act as accumulators for reflexes, store them up, as it were, and then transmit them to other parts. A destruction of the nasal swelling removes the reflexes. The experiences of numerous writers since 1883 corroborate the correctness of Hack's discovery.

By way of illustration I could not, I believe, select a better type of asthma of long standing than that of my own person. Twenty years ago, when I was 8 years of age, I became subject to so-called colds in the head and on the chest. They increased in severity and frequency from year to year, so that my surroundings were often puzzled to find an explanation for each outbreak. Presently nightly dyspnœa began to set in, in the following manner: During the day my respiration was quite free, but as soon as my head touched the pillow, the first wheeze set in; the paroxysms were very severe. They ceased, after lasting throughout the night, in the morning, with the usual expectoration of glassy mucus.

During the day there was never any difficulty, except when occasioned by laughter. Laughter would infallibly cause itching under the chin and between the scapulæ, then I would cough convulsively and the attack was upon me. But the recumbent position was the surest exciting cause. During the first years I also suffered from that form of conjunctivitis which is now known to arise from nasal disorder.

I must give Dr. Abram Jacobi, of New York, under whose treatment I was at the time, credit for having already then, even without the use of the nasal speculum, laid stress upon a nasal trouble. But the aggravation of my troubles which followed upon the introduction of weak nitrate of silver solutions into my nose, made the memory of him a less pleasant one in those years than it is at present. The greater part of 1870 to 1875 I spent in the Swiss mountains, where I was entirely well. The attacks ceased from the day on which I reached the mountains, and infallibly returned on the very day I left them. Once during harvest season in Bavaria (1872), while I sat in a meadow, I was suddenly overtaken with convulsive sneezing, coughing and asthma. It lasted hours before I could reach the neighboring village. During that same period I developed a peculiar idiosyncrasy towards dinner. In the midst of the meal I would invariably for weeks be seized with a convulsive cough, so severe that it threw me to the ground. Asthma was never absent in these attacks. Then, at other times, one or two or three sneezes would initiate an asthmatic attack; or sometimes, especially after traveling, I would sneeze sixty or seventy times without intermission. In those years I had the sensation as if the asthma were brought on by a swelling, which seemed to begin above and behind the palate (it was associated with intense itching, which I attempted to relieve by rubbing my tongue against the hard palate), and traveled downward to the posterior pharynx, then seemed to skip the larynx and continued from the trachea downward. This phenomenon lasted a few seconds, and then the attack began. Railroad travel would invariably cause a night of asthma. One hotel, at which I was frequently obliged to stop in Germany, adjoined a stable, and was regularly the cause of some of the severest attacks.

The few years which antedated my acquaintance with Hack's writings were comparatively easy ones, because the inhalation of Kidder's asthma pastilles —the only palliative I ever used successfully—gave me very great relief. They not only immediately terminated an attack, but also prevented their occurrence for the next hours.

As soon as I became acquainted with Hack's articles in the *Berliner klin. Wochenschrift*, of 1882, and with his monograph in 1883, I commenced stricter self-observation, and found the following:

As soon as I lay down my nose would become obstructed. The occlusion corresponded to the side on which I lay. By turning over, the occluded side would open and the other close. To have any part of the nasal mucous membrane touched by a probe gave such intense pain that I could not suppress an outcry. I could bring on an attack of asthma by rubbing my ala nasi against the septum.

Never did I feel the slightest dyspnœa when nasal respiration was free, and never was nasal respiration obstructed but what I felt asthmatic distress.

Under these circumstances there could be no hesitation; Dr. Jefferson Bettman (now of New York) and Dr. Henry Gradle, performed the galvano-caustic "destruction" of both inferior turbinated swellings. When I say galvano-caustic "destruction," I should like to put the word destruction in quotation marks; for I have found the radical obliteration of the entire inferior turbinated bodies almost an impossibility. Hack demands, and my experience confirms the correctness of his view, that the radical cure of asthma demands the radical destruction of the cavernous erection. But a longer and closer observation of such patients in whom the extirpation seems complete will almost invariably show relapses, which must again be subjected to operative interference.

In my own case fourteen cauterizations, performed with both a flat and furrow electrode in the manner described by Hack, have not succeeded in permanently clearing the nose. The asthmatic attacks have, to my unspeakable relief, ceased. Sleep is now a function of which I have lost all dread. But during the daily occurring fleeting occlusions, there is a feeling of heaviness on the chest and of excessive fatigue in the limbs, which do not pass away until the nose is free.

What is it that causes nasal occlusion? I have observed myself so closely in this regard, and have so many corroborative observations of intelligent patients, that I can make these positive statements:

Firstly, the fullness of the turbinated bodies is regularly influenced by gravitation, and corresponds to the position of the head.

It is furthermore influenced by the temperature, and probably much more so by artificial warmth than cold; an over-heated room will almost invariably cause swelling in such patients. But the most dangerous and permanent cause of nasal obstruction is the inhalation of dust.

The time is, I hope, not far distant when our views on the etiology of respiratory diseases will undergo a radical change. The superstition of catching cold has lived too long. The light which mycological research has thrown on the etiology of most infective diseases must soon influence us toward a conviction that respiratory diseases are *inhaled*, not caught, and that suppuration in the respiratory tract is as impossible without the presence of micro-organisms, as it is on a wound. The superstition of "catching cold" is so pernicious because it diverts attention from the entrance-way of disease-generators. It is as impossible to contract an acute bronchitis through temperature influences alone, as it is to contract tuberculosis through a cold.

It is therefore of the utmost importance to warn asthmatics that as perfect an avoidance of dust inhalation as is possible in our contaminated surroundings is necessary to prevent a recurrence of their trouble. Not only the dust in the streets, but also that in our houses, is to be avoided as much as possible. Carpets and curtains are great receptacles of dust; and a strict regulation of street sprinkling will in the course of years, when the true etiology of respiratory diseases will have been recognized, be considered as important a municipal regulation as the regulation of sewerage.

When are we to operate on asthmatics? The more recent the asthmatic trouble and the more pronounced the nasal symptoms, the better the prognosis. When complicated with chronic bronchitis and chronic emphysema, the outlook is generally bad. A most thorough examination of heart, lungs, kidneys and intestines should precede any operative interference. In cases of cardiac and nephritic asthma with nasal complications, I have *never* cauterized. Firstly, because it has seemed to me irrational; and secondly, because I feel so much gratitude towards Hack's discovery, that I shun any risk which might discredit it.

In some cases it is very difficult to decide whether an operation should be performed or not. For instance, in cases of long standing, say fifteen or twenty years, in which in the first years the nasal symptoms were very pronounced, but in later years have almost or entirely disappeared, in such cases cauterization is sometimes successful, but generally it is unsuccessful.

Cases in which the asthma is more or less constant and has lost its paroxysmal nature, give a doubtful prognosis. It has been a matter of experience with me, that those patients to whom the inhalation of Kidder's pastilles, or the application of cocaine to the nose (four per cent. solution on cotton), gives relief, afford a much better prognosis than others.

In asthmatics in which coughing precedes the attack and all nasal symptoms are missing, nasal cauterization will cure, if the cough is a so-called nasal cough.

There are a number of asthmatics, fortunately a minority, who seemingly offer a good prognosis, but with whom, for unknown reasons, the operation will fail. There can now be no doubt that there are other starting points for reflexes in the respiratory tract, besides the nose. The works of Trautmann and Tornwaldt have already added the vault of the pharynx to this list.

The bronchial tubes themselves can act as a starting point, as I can demonstrate on myself when I walk against a piercing wind, or inhale vapors of sulphurous acid with my nose plugged. So that, as Hack himself warningly says, we must not over-estimate the applicability of his discovery.

We must accuse the nose *per exclusionem*. Examine every patient thoroughly in every direction, and examine the nose *last*, is what I should like to advise.

About the operation itself, little is to be said. It is, as far as we know, absolutely harmless. I have performed many hundred cauterizations without any noteworthy complications. I have never had any traumatic infection. I insufflate iodoform or iodol upon the wound, introduce a pledget of cotton for a a few days, and keep my instruments aseptic.

The results are, on the whole, extremely gratifying. Asthma of many years' standing is sometimes broken after the very first cauterization. Almost all patients are relieved and many cured in the strict

sense of the word. Some have relapses, which additional cauterization will remove. Others again may relapse with a new reflex sensitiveness in other parts.

But on the whole the subject, still so new, still so capable of growth, broadening and development, is one of the most pleasing contributions to medical knowledge, and the name of Hack will be, I am sure, not soon forgotten.

A CASE OF ANTE-PARTUM HÆMORRHAGE AT TERM. RECOVERY.

Read before the Chicago Medical Society, January 3, 1887.

BY AUGUSTUS V. PARK, M.D.,
OF CHICAGO.
MEMBER OF THE AMERICAN MEDICAL ASSOCIATON, ETC.

On the morning of August 5, 1886, I was called to see Mrs. S., age 37 years, a large and powerfully-built American-born Irish woman, cultured and intelligent for one in her station of life; she gave me this history:

This was her ninth confinement, she had also suffered six miscarriages. Professor Daniel T. Nelson, her family physician, was compelled to use instruments on one occasion; the child was large and healthy and she made a good recovery; she had received no falls or injuries since carrying this child, to her knowledge. There was no history or evidence of specific disease. Before I finished questioning she remembered a few evenings since of running against some obstruction in the back-yard; this gave her a slight shock just at the time, but she paid no attention to it. The evening previous to my call, just as she had retired for the night, she said she was taken with a severe hæmorrhage which lasted for some time, and the amount of blood frightened her, and she called in a physician. The hæmorrhage soon stopped and her pains were nothing to speak of. There had been some propulsive efforts throughout the night, and in the morning they were simply teasing and prevented her from securing any rest. She suffered no real or hard labor pains and not a particle of hæmorrhage during the night.

I made a careful examination of the bedding and of the soiled clothing which had been removed the evening before, and found them wet and heavy and blood-stained, but was unable to find clots of arterial blood or any evidence of a severe or continued uterine hæmorrhage. The pulse was regular, the volume and strength good, respiration and temperature normal; vaginal examination revealed a rigid os uteri and situated high in the pelvis, and directed backward so it pointed toward the cavity of the sacrum; the os uteri in this situation would have escaped any ordinary examination; there was no dilatation. I was satisfied that the pains were not true labor pains and I gave tinctura opii deodarata in fifteen minim doses, and to repeat in an hour or two if necessary.

3 P.M.—I was sent for in great haste, and upon my arrival found that there had been expulsive efforts during the past hour, but she was again quite easy and free from severe pain. I again examined the os and found it more soft and was enabled to insinuate my index finger, and by careful pressure with my left hand over the fundus uteri I could distinguish the head presenting. To satisfy myself as to the true character of the pains I remained at the bedside; the pains were irregular, sometimes severe, again they would be but slight. I examined the condition of the os uteri during the period of the pain, and found that the pains had no effect upon the cervix which remained undilated and flaccid, and the membranes did not become prominent or tense. The bowels had moved early in the day and a light meal taken at 12 M. Advised the continuance of the anodyne at once and again in two hours. This would control the severity of the pains and would lessen the rigidity of the os.

11 P.M.—Found the patient suffering true labor pains, pain in the back, the os soft and dilated to the size of a twenty-five cent piece; the head at the brim of the pelvis; the edges of the os thinned; the cervix rigid with each pain; there was no bag of water to act as a cushion. 12, 1 and 2 o'clock the labor was much the same, and was what would be termed a tedious labor; the liquor amnii having all escaped with the so-called hæmorrhage and each expulsive effort accomplished but little.

2:30 A.M.—The pains are more regular, the patient is warm and perspiring; the face is flushed and the carotids stand out round and full with each parturient effort; everything seemed favorable for an early termination of labor. Soon I noticed that the pains were not as propulsive, yet they were equally as painful; complained of great thirst, constantly calling for water; she became uneasy and restless, the face losing its ruddy color and the lips bleached; the pulse feeble, rapid and easily compressible. For the first time in nearly four years of active obstetric practice I was brought to the full realization of the great danger of concealed or ante-partum hæmorrhage. There was but one thing to be thought of, and that was to deliver at once and in the shortest time practicable. I placed the patient across the bed, the head and shoulders without bolsters, the nates drawn forward over the edge of the bed, the knees well flexed and held by assistants. With the first pain I ruptured the membranes; this was followed with a gush of blood, a small amount however. I applied the forceps; the head was at the superior straight, and with the second pain I made gentle and careful traction, observing the well-known law which governs the obstetricians in the high forceps operation, and delivered a still-born child which bore all the evidences of having been dead at least six hours; gave child to the nurse and applied my left hand over the fundus uteri and made gentle pressure; soon the uterus commenced to contract and expel its contents; the blood and blood-clots that were thus forced out filled a common wash basin. The placenta was high up and normally situated on the posterior wall; with my left hand still on the fundus I experienced no trouble in reaching and removing the placenta; with this accomplished, all hæmorrhage ceased, ergot was given and gentle

pressure continued over the fundus uteri for a short period, stimulants given and patient made as comfortable as possible; pulse 140 to 145, weak and compressible, thirst continued for a few hours.

Complicating this case we had hæmorrhoids with prolapse of rectum and during the real labor pains it was nearly impossible to retain the hæmorrhoids within the sphincters; after delivery they were cleansed and returned with the replaced bowel within the sphincters and retained with a T bandage and compress; suppositories of opium and tanic acid gave quick relief. Patient made a rapid and easy recovery; was sitting up on the tenth day after confinement.

From all the phenomena observed I believe that the hæmorrhage was caused from a partial separation of a normally situated placenta. I also believe that the head of the child acted very like a ball valve and prevented the escape of the blood externally. I further believe that the blood or a portion of it found its way within the amniotic cavity, this would account for the amniotic fluid being colored with blood, also for the slight hæmorrhage that followed the mechanical rupture of the membranes previous to delivery. There must have been a rupture of the membranes high up and out of reach that allowed the escape of all the liquor amnii, for the membranes were intact, at least those presenting as far as they could be reached by a digital examination previous to delivery.

From statistics published by Churchill I find that out of 218 cases of accidental hæmorrhage thirty-two proved fatal, or one in six.[1]

I quote from Lusk's third and last edition:[2] "The circumstances under which concealed hæmorrhage takes place are given by Goodell[3] as follows: (a) When the placenta is centrally detached and the blood accumulates in the cul-de-sac formed by the firm adhesion of its margins to the uterine wall. (b) When the placenta is so detached that the blood escapes into the uterine cavity behind the membranes near the fundus. (c) When membranes are ruptured near the detached placenta and the effused blood mingles with the liquor amnii. (d) When the presented part of the fœtus so accurately plugs up the maternal outlet that no existing hæmorrhage can escape externally. I have had a case where after labor I removed at least a basinful of firm clots from the uterine cavity, and yet both mother and child survived. In my own case to which I have referred, the Barnes dilator acted capitally, not only enabling me to expand the cervix, but exciting the uterus to contract vigorously.

"The serious symptoms set in after the membranes were ruptured and compelled me to deliver with forceps. In another case I should certainly first dilate, and, after rupture of the membranes should chose version and speedy extraction, and should avail myself of a skilled assistant, whose duty it should be to compress the uterine walls externally during the act of delivery.

"In case of internal hæmorrhage occurring during the progress of the labor the treatment will depend upon the stage of the labor and the amount of blood lost, judging by its effect. If the patient be in danger of sinking, and the os uteri dilatable but the head within the uterus, there can be no doubt that we must deliver by turning; but if the loss be moderate we may perhaps afford to wait until the head descends into the cavity of the pelvis, and in all cases where it is within reach of the forceps they should be used for immediate delivery, if the case be mechanically suitable. But little hesitation need be felt on account of the child in deciding upon the mode of delivery as it is lost in almost every case of extreme hæmorrhage."[4]

We know from experience that a diagnosis of this condition is not easily made, yet the symptoms are so evident that one can only think of an internal hæmorrhage. The prognosis for the child is very bad, because, as a rule, it dies unless delivery be very speedily accomplished by nature or by art. For the mother the prognosis also is unfavorable and much more so than in placenta prævia.[5]

No. 411 26th Street.

[1] Churchill's System of Midwifery, p. 454.
[2] Lusk, Science and Art of Midwifery, p. 599–600.
[3] Goodell, on "Concealed Accidental Hæmorrhage of the Gravid Uterus." (Am. Jour. of Obstet., Aug., 1886, p. 281.) This paper serves as a mine from which most subsequent writers have drawn their data.

[4] Churchill's System of Midwifery, p. 454.
[5] Schroeder, Manual of Midwifery, p. 308.

MEDICAL PROGRESS.

A Practical Hint for Tracheotomy.—Mr. W. Leonard Braddon says: The operator is usually recommended, standing preferably on the right side of his patient, after first determining the exact relation of parts, to fix the trachea with the left hand, the fingers on one side and the thumb on the other, at the same time stretching the skin at the site of incision. The direction is at least distinct, but the manipulation is usually in effect very different. In all of many cases which I call to mind, there has been a little (the only) trouble in the operation, and in some, considerable danger, delay, or anxiety, consequent upon the way in which the attempt is made to keep the windpipe steady, as customarily taught and performed: Four fingers on the left side and the thumb upon the right side of the larynx, press with more or less force immediately backwards to hold the organ in place, with the effect of considerably aggravating the dyspnœa (especially if an anæsthetic is not being employed), of flattening the pipe against the vertebral column to some extent, of in all cases increasing the depth at which the part to be incised can be reached, and frequently of failing to secure fixity of the larynx, which, likely to move with the slightest change of pressure, is pushed still more out of reach by the increased pressure made to secure it. Any or all of this inconvenience is the result of pressing backwards with the fingers placed upon the skin immediately on either side of the windpipe.

The suggestion I have to make, and which, I have

no doubt, many surgeons have long ago thought of or adopted, although hitherto I have never seen it noticed, is so simple as to provoke a doubt as to its value, but any one who tries it will, I think, find it so effectual in practice as to have no more doubt than I have as to its advantage. Let the surgeon place his left hand, as widely expanded as possible, over the neck of a child in the position for tracheotomy; then resting the fingers upon one and the thumb upon the other side firmly upon the skin, as far to the side of the neck as they will reach, gradually draw in the thumb and fingers, and the skin (and loose tissue underneath) with them, towards the median line; as the sides of the windpipe are approached, a little more pressure, made in a backward direction, will place the ends of thumb and fingers in a position in which they almost meet behind the larynx, which is thus firmly held by the encircling hand in a position in which all the great blood vessels, etc. (which *have* been wounded) and the vertebral bodies (which, it is recorded, have *blunted a knife-point*) are far out of harm's way, the windpipe itself starting forward and standing out prominently under the skin, which is yet fairly stretched (and can be stretched more tightly) over the site of incision, and lying both as superficially as could be desired and as perfectly under control as possible. Lastly, and this I think is not altogether unimportant, this procedure may be adopted without producing more than the very slightest degree of discomfort in any ordinary child—the younger the more easily; and one is still able to make the skin as tight as possible; now, however, the necessary pressure is distributed all round, instead of acting directly backwards upon the tube so as to flatten or displace it. I have even been able without much trouble to make the thumb and fingers feel each other behind it by this means; while by the older method I have seen the production of undoubtedly a dangerous increase of dyspnœa. I may have overrated the danger, or underrated the utility of the usual method of fixation, but it has always seemed to me to be the only difficulty in an operation, which of course has none for experienced surgeons, but to others presents often some trouble, chiefly in consequence of the fact that the means adopted for fixing the part to be incised, being ill-devised though time-honored, are not only not to be relied on to secure that end, but, as I have tried to show, they directly tend to increase the depth of the wound of the trachea from the surface and the distress of the patient; and in all the accidents I have read of, and some that I have witnessed, this method has shown itself marked sometimes by danger, often by inutility. As to the barbarity of the *hook*, is it not an insult to the fingers of the surgeon?—*The Lancet*, November 20, 1886.

NEW POSITION FOR OPHTHALMIC OPERATIONS.—MR. G. M. GILES, Indian Medical Service, says: The supine position is, as most must have felt, by no means a convenient one for eye-operations. It is, however, the only practicable one when chloroform is used as an anæsthetic. The discovery, however, of a local anæsthetic, in the shape of cocaine, leaves us free to adopt any position that may be found most convenient for patient and operator.

For the last fifteen months I have been employed with an exploring party in the regions lying beyond our North West Indian frontier. Transport difficulties have rendered it necessary for us to fly very light. Hence, as may be well imagined, an operating couch formed no part of my equipment. A good deal of surgery of all sorts came to my hands, much of it ophthalmic, and I was often at a loss how to improvise a couch of some sort. Not unfrequently even the low country bedstead was unobtainable, so that one had to operate on the ground. Now, even to operate on a low bed is most difficult in ophthalmic cases, the surgeon's position being so constrained that all steadiness of hand is lost. Hence, after adopting cocaine, which I came to do very early in our travels, I began to try various positions with the view of finding one suitable to the peculiar exigencies of camp life, and finally hit upon the following position, which has been found so entirely convenient that I feel sure it is well worth a trial, not only by such as have to operate under difficulties, but even as a position of election.

The operator sits on an ordinary chair, with the knees well separated so that the patient may be able to sit on the ground between his feet. The position of the latter varies according to the nature of the operation and the side operated on. In ordinary cases, such as iridectomy, removal of pterygia, etc., he is seated with his back nearly to the operator, but with the face turned slightly to the left for the left eye, or to the right for the right. Seated thus, between the operator's feet, he throws back the head so that the occiput rests firmly on the surgeon's thigh; the left thigh in operations on the right eye, and *vice versâ*. This position answers equally well for cataract-extractions on the right side. For left cataract, however, unless the operator actually prefers to use the left hand, the following modification is necessary. Seated as before on the ground, between the operator's feet, he faces quite to the surgeon's left, then throwing back his head, and turning it slightly so that the chin points to the surgeon's hip-joint, he rests the occiput firmly on the operator's right knee. With the patient in this posture, it will be found perfectly easy to operate with the right hand.

The method is, no doubt, specially suited for dealing with Orientals, who are accustomed to sit on the ground; but for the limited time required for an operation, I do not think it will be found too constrained for Europeans. Primitive as it may seem, I feel sure that any one who will give it a fair trial will find the position much more convenient than either an ordinary operating couch or a dental chair. —*British Medical Journal*, Dec. 11, 1886.

FORMIC ACID AS A DISINFECTANT.—DR. VOITOFF, who has made a number of experiments on cultures of pyogenic microörganisms, says that formic acid is a specific against their success, and so may be considered as an excellent disinfectant.

THE
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PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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SATURDAY, JANUARY 29, 1887.

PROPHYLACTIC MIDWIFERY.

There still seems to be some who do not recognize the difference between a "Lister dressing" and "Listerian principles." It does not seem sufficient to say that the dressings may change but the principles cannot, as this has been repeatedly pointed out during the past four years, or more. Nor does it seem sufficient to say that all the principles of aseptic and antiseptic surgery and medicine are comprehended in the one word "cleanliness," as this has been repeatedly done, even by Sir Joseph Lister himself. Again, there are many who, seemingly, cannot understand the value of circumstantial evidence in medicine; they insist upon proof—absolute and incontrovertible, and question the pathogenic influence of dirt and germs in much the same way that the Rev. John Jasper disputes the movement of the earth about the sun. Those who, without any special knowledge of bacteriology and the etiology of disease, insist upon writing papers ridiculing more recent methods of investigation and the principles of antisepsis, should first learn that "antisepsis" is not synonymous with carbolic acid, with iodoform, corrosive sublimate, or any drug or drugs; that Listerian *principles* may be strictly adhered to without the use of drugs.

In the *Transactions* of the Medical Association of Georgia, for 1886, is a paper entitled "A Review of Modern Antiseptic Midwifery," by Dr. Eugene Foster, of Augusta, who attempts to "demonstrate that the antiseptic system is founded upon speculation pure and simple; and, furthermore, that this antiseptic system, as a routine practice, is, in its essential features, unscientific, unsuccessful, unnecessary and frequently harmful to the lying-in woman." And "the facts upon which the argument is based are taken almost exclusively from writers who are, or have been, advocates of the antiseptic system." In opening the argument on this question he first proposes to consider the theories as to the essential nature of puerperal fever, each one of which, he says, "is a matter of unadulterated guess-work." He does not discuss the question from the stand-point of labor in hospitals, but in private homes; for he says: "There is no analogy whatever between puerperal fever in private practice and hospital experience as to the modes of infection and the necessity of prophylaxis." If this be true, why apply hospital statistics to those of private practice? Why reason in private practice from hospital experience? If filth can cause disease in a hospital it can do the same thing in a private house; if it cannot cause disease in a hospital it cannot in private practice. If, as Dr. Foster says, labor is a purely physiological process, it is as much so in private practice as in a hospital, and *vice versâ*. It need not be said that private homes are in better sanitary condition than hospitals; for if antiseptic principles be unscientific then filth has nothing to do with the matter. If there be no analogy between puerperal fever in hospitals and that in private practice there can be none between amputations, compound fractures, typhoid fever or any other disease or affection in the two places. But to refuse to admit hospital statistics in this question practically shuts out argument, and reduces the whole matter to one of (simple individual opinions). However, the author of the paper under consideration does "not shrink from the task of attempting to demonstrate that even in hospitals the antiseptic methods have been unsuccessful."

Before witnessing this attempt it may be well to ask, why, in enumerating and commenting upon the theories of puerperal fever Dr. Foster, after quoting the masterly work of Lusk, should have wholly ignored his consideration of the "Nature of Puerperal Fever as regarded from the Standpoint of modern Investigation?" He gives what he calls Semmelweis's theory, Fordyce Barker's theory, Pasteur's theory, and Dr. Kinkead's theory of puerperal fever; but singularly enough he omits any mention of the facts contained in Lusk's work (Edition 1885, pp. 654–668), in which all the evidence in the case has been most carefully, and in a most masterly manner, collected and interpreted. Dr. Foster claims "distinctly that in epidemics of puerperal fever there are occult epidemic constituents of atmosphere, either local or general, which produce these epidemics in

recurring cycles." Where do these "occult constituents of atmosphere" come from; who has seen them; have they been isolated, cultivated, injected into mice and produced symptoms and lesions identical with those of the original disease? If not, we may as well attribute puerperal fever to volcanic eruptions or a shower of meteors.

The attempt to prove "that even in hospitals the antiseptic methods have been unsuccessful" may be attributed to a confusion of terms; to the idea that antisepsis, or asepsis, consists in carbolic sprays and injections of solutions of certain disinfectants or germicides. Where asepsis is complete antisepsis is unnecessary. Obstetricians will no doubt be surprised to learn that the author takes the statistics of the Rotunda Hospital and the Vienna Maternity to prove that antiseptic methods are unsuccessful; but, on investigation, it is found that he does not recognize that absolute cleanliness is *the* great antiseptic precaution. He does not mention the fact that the Rotunda Hospital is one of the best ventilated hospitals in the world; nor does he seem to realize that good ventilation is an antiseptic precaution. He declares that antisepsis has had nothing to do with the good results at the Preston Retreat, under Dr. Goodell, and then quotes Dr. Goodell: "I am governed by four golden rules—cleanliness, ventilation, rotation, and isolation!" Are not these antiseptic precautions? As against antiseptic principles he quotes *some* statistics from the New York Maternity Hospital (from 1875 to 1882, inclusive). He then says that in the autumn of 1883 Dr. Garrigues overhauled the Maternity, and instituted new antiseptic measures (which may be found in Lusk's Midwifery, p. 689, footnote); but he does not tell us that "in the following 162 confinements there were no deaths, and from October to July inclusive, of 409 patients confined, though many operations were performed, five died; but of these, only three were from septic causes, and they, Dr. Garrigues believes, were the results of the neglect of certain of the prescribed details." Lusk says (p. 693): "The great improvement in the condition of maternity patients in recent years has been due to the application of Lister's antiseptic principles in obstetric practice." He does not say that it has been due to vaginal injections, to carbolic acid, to corrosive sublimate, cheese-cloth, or iodoform, or to the application of Lister's *details*, but of his *principles*. Certainly it is no argument to quote statistics of a hospital which used details and neglected first principles, as does Dr. Foster in the case of the Philadelphia Hospital.

Obstetricians are familiar with the paper relating to this subject read by Dr. T. Gaillard Thomas before the New York Academy of Medicine about three years ago. This paper was admired and criticised by the leading obstetricians of the country at the time; and Dr. Foster now takes up the rules therein laid down *seriatim*. He ridicules the proposition to disinfect the lying-in room before labor, for the remarkable reason that if there are any germs they must have come from the atmosphere, and that it is impossible to disinfect the atmosphere of an occupied room. With regard to the rule that nurses and physicians should take care that all their clothing is free from exposure to the effluvia of septic infection, such as typhus fever, erysipelas, etc., Dr. Foster says: "To this rule I have no objection, so far as it is intended to protect the lying-in woman from zymotic diseases. If, however, it is intended to contend or intimate that the poisons of scarlet fever, measles, variola, etc., can produce puerperal fever, I most unhesitatingly deny the proposition." So far as the woman is concerned it is perhaps immaterial with her whether she die of puerperal fever or scarlet fever; and the fact (if it be a fact) that scarlet fever cannot produce puerperal septicæmia is no argument against antiseptic precautions and principles. The rule which prescribes that the physician should wash his hands in soap and water and scrape the nails, and afterwards use a solution of bichloride of mercury, is criticised by quoting the experiments of Förster, which showed that solutions of carbolic acid, boracic acid, zinc and iron chlorides do not sterilize the hands; but in the same paragraph he quotes Förster to the effect that the hands *were sterilized* by the use of a solution of corrosive sublimate of 1–1000 (the solution recommended by Thomas).

It is needless to follow this paper to its conclusion. Had the author used the word *details* instead of "system," "methods," and "principles," his paper would not present such a prominent mark for legitimate adverse criticism. Many good obstetricians, and many good surgeons, may be found who do not follow the minute details of antisepsis as laid down by others, because they think they are unnecessary; but those who have given the *principles* intelligent study and thought both believe and act upon them. Furthermore, while all the intelligence of the profession is not centred in those members who have hospital positions, it only needs a moment's reflection to see that such men have the advantage of others in experience. Intelligence without opportunity will not show the usefulness or worthlessness of principles or details. The fact that an Indian woman

who is confined by the side of a purling brook at the foot of Mt. Hood, does not have puerperal fever is insufficient proof that a woman confined in the Vienna Maternity can not have it; nor does the fact that a woman may be injured by repeated vaginal injections show that she cannot possibly contract puerperal fever when confined in a filthy room, attended by a careless physician. Among other honored members of the profession Sir Joseph Lister comes in for a large share of Dr. Foster's ridicule. Lister's contribution to medicine does not lie in the fact that he invented a spray for throwing carbolic acid vapor; not in the fact that he once used cheesecloth; that he made a metallic case for keeping surgical needles in carbolized oil—but in his system, his principles, of antiseptic surgery; which principles, not details, have been successfully applied to midwifery. The truth of principles is not proved by any one set of details; but Lister's principles have been shown to be true because they hold good under any and all details in which the principles are adhered to. Even the once hated and despised, but now honored Semmelweis comes in for a share of the ridicule which Dr. Foster attempts to heap upon members of the profession who have worked, and are now working for the good of humanity.

INTERNATIONAL COLLECTIVE INVESTIGATION OF DISEASE.

During the session of the Eighth International Medical Congress in Copenhagen, 1884, an International Collective Investigation Committee was organized, composed of representatives of Sweden, Norway, Denmark, Finland, Russia, Germany, Austria-Hungary, Switzerland, France, Great Britain, India, the United States, and South America. The two representatives on the Committee for the United States were Professors A. Jacobi, of New York, and N. S. Davis, of Chicago. Under the personal supervision of Prof. Jacobi a large number of the blanks for making returns adopted by the International Committee were printed in a neat and convenient form, and distributed to members of the profession in different parts of this country. Those receiving them were requested to fill up the blanks in due form with such cases of the several diseases as should come under their observation, and return the same to Professor Jacobi, on or before the 1st of January, 1887. A few weeks since he gave notice, through the medical journals, that he had resigned his position on the Committee, and requested those interested to make their returns to the other American member of the Committee, N. S. Davis, M.D., 65 Randolph street, Chicago. As it is very desirable to derive as much benefit from the expense and time already bestowed in printing and distributing the collective investigation blanks, and equally desirable that the work in this country should not prove a failure, we wish to add to the request of Prof. Jacobi by urging that all those who have blanks with recorded memoranda would return them as promptly as possible to the address already given above.

PRESENTATION TO DR. N. S. DAVIS.

On Thursday, January 20, the fiftieth anniversary of the entrance of Dr. N. S. Davis into the medical profession, he was presented by the students of the Chicago Medical College with a magnificent arm chair and a valuable and beautiful revolving set of reference shelves. The presentation was made by Professor W. W. Jaggard, in behalf of the students, and Dr. Davis responded in a most graceful manner. It has been but a few weeks since Dr. Davis's seventieth birthday was celebrated at his house by a large number of his friends.

It is peculiarly fitting that the students of the College of which Dr. Davis is practically the founder, the College which represents the principles of higher medical education for which he did so much before its foundation, and has done so much since, should have taken some note of his fiftieth birthday into the profession. Indeed, the American Medical Association is the outgrowth of Dr. Davis's earnest endeavor to raise the standard of medical education in this country. E.

SOCIETY PROCEEDINGS.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, January 3, 1887.

THE PRESIDENT, EDMUND J. DOERING, M.D., IN THE CHAIR.

DR. E. J. KUH read a paper on

THE ETIOLOGY AND CURE OF ASTHMA.

(See p. 121.)

DR. J. A. ROBISON, in opening the discussion, said: The facts, which are indeed facts, that have been related in this paper are of interest not only to the specialist but to the general practitioner. It has been a fact long known to specialists that obstruction of the passage of air through the nares will give rise to asthma, and a great number of articles have been written on this subject. It has also been demonstrated that when operations have been per-

formed that cleared away these obstructions the relief from the asthmatic attacks was complete. This can be easily demonstrated by any physician. Cases of nasal polypus are quite frequent and they do not always fall under the care of a specialist. The operation is generally a very simple one, almost any physician, without special training, can remove nasal polypi, and it is really wonderful to find how many cases of asthma are thus cured. As to asthma being due to other causes, I have no doubt of the truth of the observation made by the author, that is that transitory swelling which takes place in the turbinated bodies in cases of mild irritation. I presume we have all noticed that when we are affected with an acute coryza and go to bed at night the narium of the side on which we lie becomes obstructed, and if we turn over the other side will become obstructed. This is undoubtedly due to the force of gravitation in a great many cases where the mucous membrane is especially sensitive. There is no doubt that in a great many cases by the irritation of a probe, or the inhalation of dust, coughing can be produced resulting in asthmatic attacks. Therefore this demonstrates that reflex irritation of the nares is one of the causes of asthma, and it points out very clearly the method of treatment which should be instituted. The author has rendered a service in showing that there are such a large number of cases in which by destroying the turbinated bodies we can prevent the occurrence of reflex asthma. It would have been an interesting question to solve whether, in the case of the author's personal experience, a respirator worn over the nose so that the air could not pass through the nose unless filtered, would have been of any benefit in preventing the recurrence of the asthma.

DR. H. MARTYN SCUDDER: About five years ago, when practicing in India, where I had to ride on horseback a great deal in the sun and breathe a great deal of dust, I suffered frequently from acute attacks of coryza, accompanied occasionally by bronchitis and slight asthma. The nose was not much obstructed, and when an attack of coryza came on fifteen minutes sleep would often cause it to pass away. Gradually the attacks became more severe and were accompanied and followed by some obstruction. When in London more than three years ago, Dr. Mackenzie wanted to cauterize my nose, but it was before the days of cocaine and I decidedly objected as I thought the remedy worse than the disease. Since coming to Chicago I have been troubled less than when abroad. Quite recently I had my nose cauterized by Dr. E. Fletcher Ingals, and it has certainly relieved the trouble to a very great extent. My experience, however, was somewhat different from Dr. Kuh's as the cauterization gave me considerable trouble for a week or two. It was followed by soreness and even by slight chills, and it made me feel out of sorts for about a fortnight, but it was successful in relieving the obstruction and I have had no more asthma or bronchitis, although once in a while I still suffer from coryza.

DR. JOSEF ZEISLER said: Professor Schnitzler, of Vienna, has published a number of cases in which decidedly polypus of the nose has caused asthma, and where by the use of the polypus the asthma was cured. I can confirm what Dr. Kuh has said in regard to the effectiveness of the galvano-cautery. I had a case of a boy 12 years old, who had nearly all his lifetime had chronic eczema of the hands and asthma. Believing that the asthma was in causal relation to the eczema, I referred the patient to Dr. Kuh for treatment of the former trouble, while I prescribed local applications for the hands. Very soon both affections were cured and have remained so for the last year.

DR. H. N. MOYER asked what the author means by the term essential asthma, whether he means reflex asthma or something different?

DR. KUH, in closing the discussion, said: By essential asthma, I, of course, mean, as I have been attempting to explain all the evening, reflex asthma; the same asthma which textbooks classify as idiopathic or nervous or essential asthma. In lieu of these clouded expressions we have now, fortunately, a term by which we express an etiological meaning; namely, nasal asthma. It teaches us again, that the term neurosis always smacks of the hypothetical; and that when we speak of any pathological condition as a neurosis, we do so in order to cover ignorance. An asthmatic individual is not necessarily a "nervous" one, although I, of course, am not blind to the fact that some unknown factor must come into play in order to affect disease through nasal reflex. In regard to Dr. Zeisler's remarks on the connection between polypi and asthma, I did not know that Schnitzler, of Vienna, had published forty cases of nasal polypus with asthma. I am greatly surprised that such a publication should have escaped my notice. I quoted Michel, of Berlin, as having reported 135 cases of polypus without asthma. There is no doubt that sometimes nasal polypi cause asthma, but as far as I am aware, only exceptionally so. Hack found that when a patient had polypus with asthma and he left the polypus untouched and cauterized only the turbinated bodies, the asthma disappeared, although the polypi remained in the nose. I think there can be no better evidence of the relative innocence of polypi than that experiment. I have been asked whether, if I had worn a respirator, I would have been free from asthma in traveling. I found that to be the case. For when I plugged my nose with cotton while traveling, I remained free from asthma. Dr. Scudder said that nasal cauterization gave him trouble for weeks. This could only have been through wound complication. An asthmatic may have very severe trouble for a week or less after cauterization, on account of the eschar.

In order to show how careful one must be in diagnosis I should like to interpolate the following description: A patient with the mildest form of asthma, namely, the occasional involuntary deep, sighing inspiration, consulted me. The examination was negative with the exception of slight tympanites (the abdomen should always be carefully examined in such cases) and slight swelling of the inferior turbinated bodies. I treated his mild constipation for

weeks, without any benefit to his respiratory trouble. Then I cauterized, also without effect. At last I discovered that his alæ nasi were so pliable that when he inhaled through the nose they collapsed and occluded the nares. In regard to the claim that injections of boracic acid solution into the nose will relieve asthma, I should simply refer to the uniformly condemnatory verdict of all specialistic practioners against the use of the nasal douche in such cases.

Dr. Elbert Wing, Pathologist to Cook County Hospital, showed

A HEART SHOWING ATHEROMA AT THE BASE OF THE AORTA AND IN THE MITRAL VALVE,

and a condition described by the Germans as *prior chronic endocarditis*. The last mentioned lesion itself in the distribution of grayish streaks or patches on the endocardial surface, lying irregularly distributed over it. When this lesion has proceeded far enough fatty degeneration follows, shown by patches which appear slightly yellowish to the eye. The patches upon the valves are upon the anterior segment of the mitral. They are simply interesting and would cause no symptoms whatever. I do not know that such a case has any further interest than that these things very frequently exist, and in my experience more than a majority of cases present lesions of prior chronic endocarditis.

Dr. Wing also exhibited

A LUNG SHOWING ONE OF THE POINTS OF DIFFERENTIAL DIAGNOSIS BETWEEN A CAVITY RESULTING FROM TUBERCULOSIS, AND ONE RESULTING SIMPLY FROM DILATATION OF A BRONCHIAL TUBE IN BRONCHIECTASIS.

That point is the persistence of bands, or stumps of bands, of the more resisting tissues which remain, sometimes passing across the cavity. As the fibrous tissues are more resistant than the others in the lung they are the last to disappear in the necrotic process. In this specimen there are a few cavities in the apex, some of them large, and the tubercular infiltration extends entirely to the base of the lower lobe of the right lung. There was extensive adhesion of the two layers of the pleura over the lung.

Dr. W. T. Belfield asked for a repetition of the diagnosis distinction between cavities due to tuberculosis and bronchiectasis.

Dr. Wing said: A cavity resulting from bronchiectasis has a smooth pyogenic membrane, and upon washing it, no stumps of these bands can be seen upon its floor, but in a cavity resulting from tuberculosis there are always some of these stumps or bands present. Sometimes they are very short, at other times long, and at times, as in this case, they are easily seen and demonstrated.

Dr. A. V. Park read a report of

A CASE OF ANTE-PARTUM HÆMORRHAGE AT TERM. RECOVERY.

(See page 124.)

Dr. A. V. Park reported

A CASE OF PYELITIS OF NINETEEN YEARS' DURATION, CAUSED BY A RENAL CALCULUS. RECOVERY.

(See No. 6, Vol. viii.)

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, January 12, 1887.

The President, J. Solis-Cohen, M.D., in the Chair.

Dr. H. A. Wilson read on behalf of Dr. John B. Roberts the report of

A CASE OF SUPRAPUBIC LITHOTOMY, FOLLOWED BY DEATH FROM PERFORATING ULCER OF THE STOMACH.

The following case of removal of stone from the urinary bladder by the suprapubic or high operation, is reported as proving the position which I have so long insisted upon, that this operation is easily accomplished, and is free from many of the dangers of the lateral perineal operation.

C. H., aged 63, applied to me for relief from frequent urination, and other bladder symptoms, and was sent to the wards of the Pennsylvania Hospital. Upon the introduction of the lithotomy sound, it was easy to discover the presence of a stone. When the catheter was used, the stone was struck before any urine was drawn from the bladder, apparently proving that the calculus lay close behind the prostate gland. The patient was a very fat man, with poor circulation, and evidently a bad subject for etherization or operation. The urethra was large and easily distended. It therefore seemed to me proper to attempt the removal of the stone by the rapid crushing method.

With this object in view, I had him frequently dilated with large bougies, in order that the urethra and bladder might become tolerant to the contact of instruments. Subsequent to this preparatory treatment, I made an attempt to crush the stone with a lithotrite, expecting to evacuate the fragments by the ordinary method of Bigelow. Repeated efforts proved the impossibility of seizing the stone, either because it was too large to fall into the grasp of the blades of the instrument, or because it was encysted behind the prostate gland. Even with a finger in the rectum, and with the jaws of the lithotrite turned downward, seizing the stone was impossible.

As the man's perineum was deep, and as I believed that the perineal operation was inferior to the suprapubic one, because of the liability of hæmorrhage, of injuring the seminal ejaculatory apparatus, and also because of the supposed size of the stone, and its possibly encysted character, I determined to perform the suprapubic operation.

After etherization, a rubber bag, to which was attached a long tube, was placed in the rectum, and filled with about twelve ounces of warm water. The bladder was afterward filled with 6 or 8 ounces of a weak solution of bichloride of mercury. A three-inch incision was then made in the median line through the skin and a depth of nearly two inches of adipose tissue. The muscles were then separated, and the tissues torn through with my finger until I came upon the distended bladder. By means of a curved needle I passed a string through the top of the bladder, and brought both ends out of the wound to serve as a

handle by which the bladder could be held up close to the surface. A longitudinal incision of about an inch in length was then made in the anterior wall of the bladder from above downward. The water immediately escaped from the bladder, and on the introduction of my finger I felt a large flattened stone lying in the lower portion of the organ, but not encysted. After some little difficulty the calculus was seized in ordinary lithotomy forceps and drawn out of the bladder, the wound in which was then closed with interrupted catgut sutures. The muscles were brought together by buried sutures of catgut, and the integument subsequently closed in the same manner. A drainage-tube was carried in at the middle of the incision, and pushed down into the space between the anterior wall of the bladder and the pubic bone. The edges of the wound were finally sprinkled with powdered iodoform, and the ordinary antiseptic dressing of gauze and corrosive sublimate applied. A hard-rubber catheter was left in the urethra in order to drain the bladder. At the end of twenty-four hours it was found impossible to keep the catheter in the bladder because of the pain which it gave the patient. Accordingly, his urine was drawn at frequent intervals by means of a catheter similar to that originally introduced, but it was very difficult to keep the dressings properly applied and avoid their becoming soiled by the urine.

Three days after the operation the wound seemed well united along the surface, and a couple of days later the drainage-tube and two of the sutures were removed. Dribbling of the urine soon began to occur through the opening left by the withdrawal of the tube. This continued until eight days after the operation, upon which day the last suture was removed. On the evening of the same day the patient vomited about six ounces of blood, and during the straining of the vomiting on that day, or on account of the sitting up in bed a few days later, the wound became gaping throughout its entire length. The edges of this reopened wound were again brought together by sutures of silkworm-gut and shot.

From this time forward the man's general condition was bad, although the wound gradually closed, except superficially, and all dribbling of urine from the wound ceased. In fact, he seemed to have recovered from the local effects of the operation, and to have left merely the deep wound through the skin and superficial fascia. Here the granulations were sluggish, and the repair of the opening in the fatty tissues and skin very inactive. He was, however, able to pass his urine normally through the penis, and, so far as urinary symptoms were concerned, was in a very comfortable condition. There persisted, however, nausea, a dull, uncomfortable feeling of pain in the epigastric region, and a total want of appetite. I was unable to make any definite diagnosis as to the meaning of these symptoms. Disease of the liver or stomach were the suggestions which came to mind.

Two months after the operation he suddenly suffered intense pain in the epigastrium, and immediately went into a condition of profound shock, from which he never reacted. A few days before this time he had been sitting up in a chair every day, and the wound in the abdomen was almost closed. He had no trouble in urinating, and was very comfortable, except for the epigastric pain and the great weakness.

The post-mortem examination showed a large gastric ulcer the size of a silver dollar, which had caused perforation of the walls of the stomach, and had allowed its contents to escape into the peritoneal cavity. The cause of the vomiting of blood, of the impaired nutrition, and of the constant pain which he suffered for many weeks before his death, was, therefore, shown to be a gastric ulcer, probably present before the time of operation, but latent in regard to symptoms.

The ease with which the suprapubic operation can be performed, due largely to the distension of the rectum and bladder by the fluid forced into them previous to making the first incision, was clearly demonstrated in this case. The facts that union of the bladder wound and early restoration of the functions of the bladder in regard to urination readily occur after the high operation for stone, and that wounding of the peritoneum is easily avoided, make this method of removing vesical calculi very satisfactory. The unfortunate death of the patient from disease of the stomach does not in any way vitiate the results of the operation; for, although the patient had not recovered sufficiently to be discharged from treatment, still the operation had effected the results which I sought.

THE PRESIDENT presented

A SERIES OF THREE EPITHELIAL OR PSEUDO-MEMBRANOUS CASTS OF THE TONSILS AND PALATINE FOLDS OF A CASE OF DIPHTHERIA.

The patient is an adult, and has exhibited no symptoms of a constitutional infection. The local disease was limited to the tonsils and palate: one tonsil became parenchymatously enlarged and underwent suppuration. The abscess was opened twice. At present there is an additional abscess in the upper portion of the palate. There has been no complication in the case except from difficulty in deglutition, so great that for forty-eight hours the patient had to be nourished mainly by the rectum. Two days ago there was brought to me a thin sheet of false membrane, which was an accurate mould of the tonsil and palatine fold. Yesterday a similar mass of desquamation, having much the same shape, was brought; and this morning a third mould has been thrown off. The appearance of the second cast closely resembles a cast of the interior of the larynx and trachea, and could readily have been mistaken therefor had there been any laryngeal complication. Manipulation, however, demonstrates that it has sheathed the tonsil and one of the palatine folds.

The point to which particular attention is called, is the physical resemblance of these patches to the desquamated epidermis in scarlatina.

DR. J. H. BRINTON made some remarks

ON THE USE OF WHALEBONE BOUGIES IN THE TREATMENT OF URETHRAL STRICTURES.

I propose, for a few moments, to ask the attention of the Society to some points in the application of

filiform bougies to the treatment of urethral stricture, although it is not my purpose to institute any comparison between other modes of treatment and that of which I shall speak. I wish merely to refer to the process of rapid dilatation, effected in the course of a few minutes, by the introduction of stretching instruments, the employment of which is preceded and accompanied by the use of filiform bougies. When these latter were first introduced they were warmly welcomed, but I think that of late some disappointment has been felt in regard to their efficiency, a disappointment which, however, I do not share. I believe that in these instruments we have an efficient mode of treating stricture, provided they be properly constructed, and skilfully manipulated.

As I have never been quite satisfied with the whalebone filiforms of the shops, I have for some years been in the habit of making my own, and with these I have experienced comparatively little difficulty in treating stricture, and in relieving obstinate cases of retention. My experience has convinced me that all organic urethral strictures of non-traumatic origin are pervious to the filiform bougie, patiently and systematically essayed, and this is the essential and starting-point in the treatment which I prefer.

In making my bougies I purchase the material from a dealer in New York. These long, slender, rounded whalebones of various thicknesses are articles of commerce and are used for many purposes in the arts. They are rounded through a drawplate, and come in lengths of twenty-seven to twenty-eight inches, costing about two dollars a gross. Each piece will make two bougies. In preparing them I first cut off the end transversely, so as to get rid of any tendency to split. I then round the end by rubbing it lightly on a sheet of emery-paper gummed upon a board. I then make the extremity bulb-shaped. I am told that the bulb is usually produced by the action of a file. This, I think, is objectionable, as it impairs the fibre of the bone, and renders it liable to break or cut when metallic instruments are slid down over it. I make the bulb extremity by placing the end of the whalebone in a groove on the board, and shave or scrape it from the end with a very sharp knife. I then shave down the shank and neck in like manner in the opposite direction, until I have formed a conical neck from three to four inches long and of almost capillary thickness as it approaches the bulb. The shaping of the bulbar end demands some dexterity in handling the knife, and to insure accuracy I do this under a lens of low power. Having shaped the filiform with the knife, it may, if desired, be yet more smoothed by being rubbed laterally on the emery board. In case cylindrical whalebone cannot be obtained from the manufacturers, the irregular strips may be readily rounded by being passed through a watchmaker's drawplate, or wire gauge. As the filiform bougie is the guide upon or over which metallic instruments are to be passed, each one should be carefully fitted. This can be done by frequently passing it upward and downward through the tunnelled perforation in the beak or extremity of each and every instrument in conjunction with which it may in future be used. This may seem a small matter, but, in fact, the harmonious action of the guide bougie and its metallic companion has much to do in effecting a ready passage of a strictured point. [The speaker here illustrated the process of constructing the bougie.] After using one of these instruments, should the neck become bent or twisted, I place it for a moment in hot water, and then press it between the leaves of a book.

In endeavoring to pass a stricture I make the first attempt with a single whalebone; if it passes, well and good. If it does not go through, I follow it with others, perhaps five or six, until the follicles or folds of the mucous membrane near the stricture are occupied. Then by patiently essaying the inserted filiforms, I almost always succeed in getting beyond the stricture at the first sitting. Sometimes, although very rarely, and in non-urgent cases, if great difficulty be encountered at the first trial, and the patient be frightened and irritable, it may be advisable to desist for the day, and to make a subsequent second attempt. Success at the first trial is, however, the rule, if the instruments be well made, and the efforts be gentle. There is, however, a caution to be observed as to the time of making use of filiform instruments. Their application in cases of tight stricture should be primary—I mean that one cannot expect to succeed with them if they have been preceded on the same day by the attempted introduction of round-ended instruments, the tendency of which undoubtedly is to obscure or close in some way the narrow opening of a resisting stricture, and thus to render its detection more than usually difficult. I may add here that I always use the straight filiform.

The whalebone, when once introduced, serves as a guide to the metallic catheter, or stretching instrument. This may be the tunnelled catheter, or any of the various forms of ditators or divulsors; preferably, I think, that of Sir Henry Thompson, followed by the powerful and most efficient instrument designed by Professor S. W. Gross, and which registers from 16 to 40 of the French scale.

In using metallic instruments in conjunction with the filiforms, there is one point to which, I think, attention has not been directed. We are ordinarily told to slide the metallic instrument over the whalebone through the stricture into the bladder; in so doing, the whalebone may be cut at the seat of stricture. I have often heard of this accident, and I have seen it happen. I avoid it in this manner: Having passed the whalebone into the bladder, I carry the metallic instrument—threaded on it, as it were—down until I reach the stricture, the point of resistance. I then cease to push the metallic instrument along the filiform, but slightly withdrawing the latter to gain a little by its conicity, I grasp firmly both instruments between my thumb and finger, and carry them on together. In this way I am almost certain to pass the resisting point, and, if the stricture be single, to reach the bladder. I speak on this matter somewhat positively, since I have used these instruments largely, and cannot, for many years, recall a case which I have failed to pass in the manner described.

In employing the stretching instrument I usually

separate the blades as far as No. 30 or No. 35 of the French scale, and on its withdrawal, introduce a steel bougie of about the same calibre, to see that all is right and that the urethra is clear. The bougie is then removed and is not reintroduced until the third or fourth day. The after-treatment consists in the hypodermic use of morphia, etc., full doses of quinine, and in a milk diet.

In retention dependent upon tight and irritable stricture, not readily overcome by the catheter, I have often succeeded by simply passing a whalebone into the bladder and leaving it *in situ*. The urine will readily pass along the filiform by capillary action, and the steady dribbling thus established will in a short time empty the bladder. The presence of the whalebone serves also to render the stricture less tight, and so facilitates the after-passage of metallic instruments, should their use be considered desirable.

DR. S. W. GROSS said: I take it that Dr. Brinton has confined his remarks to the treatment of very tight strictures. I think that the younger members of the profession, who are not much accustomed to the use of filiform bougies, ought to be told not to put too much confidence in them. The filiform bougie does not pass with a great degree of readiness through a small stricture, or even through a large one in all cases. I differ from the speaker in regard to the usefulness of the twisted bougies. In the great majority of strictures the orifice is eccentric. A twisted bougie will often pass after we have failed to pass a straight bougie, although the urethra has been packed with them.

We know that in cases of stricture not the result of traumatism, the obstruction does not arise from the organic stricture itself. A man may have been suffering with stricture for some time, and the calibre of the urethra have been gradually narrowing until the stream of urine becomes very small. In this condition he exposes himself to cold and wet, and in the course of a few hours is unable to pass urine. In such a case the obstruction is not due directly to the organic stricture, but there is a superadded spasm of the muscles of the urethra, and it is spasm which we have to overcome rather than the coarctation itself. In such a case, the patient being under the influence of an anæsthetic, I carry a medium-sized instrument, say one whose shaft measures No. 16 and whose point is No. 13 of the French scale, down to the stricture, supporting, if necessary, the curve of the the instrument with the finger on the perineum or in the rectum. In the majority of cases gentle pressure for a few minutes will enable the instrument to pass into the bladder. I have succeeded in this way in cases where I have failed to introduce a filiform bougie. A convenient way of passing the filiform bougies is first to pass into the urethra to the seat of stricture a short metallic tube, and then carry the whalebone bougies through this tube.

I have met with the difficulties referred to in the manufacture of the whalebone bougie. The cutting of the bougie is often due to the instrument which passes over it. The eye is at times so sharp that it strips up the whalebone. Care should be taken to see that the opening is well rounded.

In the operation described by Dr. Brinton, which is the one to be used if it is so desired in these cases, it is always well after passing the coarctation and relieving the retention, to bring the urethra up to a certain calibre, and that is another point in the treatment of stricture. How shall we know to what extent we shall divulse or excise a stricture? The operation described to-night is really that of divulsion. I had to-day at my clinic a case in point. It was that of a young man from a distance. He was etherized, and in order to determine to what extent the stricture should be cut or dilated, I introduced into the urethra the urethrometer, with which we can measure the capacity of the urethra. In this case there were two strictures. Immediately in front of the first, which was six and one fourth inches from the meatus, the urethra had a capacity of No. 31. In such a case, as the stricture always shows a tendency to contract, it is well to cut or rupture it to No. 34 or 35, to allow for the subsequent contraction.

The instrument to which Dr. Brinton has referred, I had made more particularly for the purpose for which he has used it. At the time that I invented this instrument, I was a rather firm believer in the treatment of stricture by divulsion. I do not employ this method now, although I would use it in a case of retention of urine. It is no more dangerous than cutting, and cutting is no more dangerous than divulsion. The cutting can be more accurately limited than the divulsion. With the latter method we tear not only the stricture, but also the mucous membrane at some distance in front of and behind the stricture. In a specimen in my possession where divulsion was employed, there were no less than nine rents in the mucous membrane, and the rent in the stricture was oblique and had not gone completely through the stricture. This method will do in superficial strictures, but in hard fibrous strictures we have to supplement this operation with urethrotomy. It is for this reason that I have given up divulsion for internal urethrotomy, and I do not resort to this latter operation so frequently as I formerly did. When the patient is within convenient distance, I much prefer, in ordinary cases of inflammatory stricture, and in recent cases more particularly, to resort to gradual dilatation. I have reached the firm conviction that the cases in which radical cure is produced by divulsion, internal incision, or external incision, are so rare that it is rarely worth while to resort to these operations.

DR. CHARLES B. NANCREDE said: While agreeing with most of that which has been advanced by Dr. Brinton, I am rather more in accord with the last speaker. When I intend to do any radical operation, I prefer incision, for then I know exactly what I am doing. My experience teaches me that filiform bougies are not always easily passed through a stricture, even when it is of comparatively large size. Where I have failed to pass the filiform bougie, I have frequently succeeded with a metallic instrument of fair size. I have never had to tap a bladder for retention, but have always succeeded, sooner or later, in getting into the bladder with a filiform bougie.

Although well aware of the eccentric position of

the orifice of most strictures, I was particularly struck with the usefulness of recognizing this fact some years ago, in a case of organic stricture in which the urethra had ruptured. Dr. Packard had made several incisions to relieve the infiltration of urine, and when the patient was turned over to me as a hospital case, the larger part of the urine was passed through an opening at one side of the root of the penis. I tried, on a number of occasions, to pass filiform and other bougies, but always failed. I then called a consultation, intending to perform external urethrotomy. Under ether, I again failed to pass any instrument. I asked Dr. Packard to try. Passing the bougie down to the stricture, he carried it transversely to the left, at a right angle to the course of the urethra, passed it in this direction for about half an inch, and then again by a right-angled turn passed the instrument on in the normal direction of the urethra through the stricture, which was not tight. The instrument was tied in, and the patient eventually recovered. In like manner, a twisted filiform bougie may do good service in a tight stricture. I do not think that the filiform instrument is entirely free from danger in the hands of a tyro. There are cases in which the extremity has been caught in a crypt behind the stricture, a false passage made, and this erroneous route has been followed up with other instruments. Whalebone filiform bougies are, however, of the utmost value when skilfully used, and I should feel completely lost without them to fall back upon in a difficult case. Like Dr. Brinton, I have found it necessary to make them myself. I heartily endorse his method of procedure after the tunnelled catheter or sound has entered the stricture, and have for years resorted to it myself, with invariable success.

Dr. Brinton said: The remarks which have been made only show that every surgeon operates according to the habit of his own mind and hand. While I do not claim that the method which I have described is better than that of others, I can only say that it is one which I have followed for many years, which has yielded me great success in the past, and to which I look forward with confidence in the future. I believe, too, that uniform success in this procedure can only be secured by the use of properly constructed filiforms, and by the observance of the cautions to which I have referred.

STATE MEDICINE.

A PROPOSED PHARMACY LAW,

Adopted by the Legislative Committee of the Nebraska State Pharmaceutical Association.

AN ACT

To Regulate the Practice of Pharmacy and Sale of Poisons, and to Prevent Adulterations in Drugs and Medicinal Preparations in the State of Nebraska.

Whereas, The safety of the public is endangered by want of care in the sale of poisons, whether to be used as such for legitimate purposes, or employed as medicines, and dispensed on the prescriptions of physicians.

And Whereas, The ability of physicians to overcome disease depends greatly upon their obtaining good and unadulterated drugs and properly prepared medicines.

And Whereas, The persons to whom the preparation and sale of drugs, medicines and poisons properly belong, known as apothecaries, chemists and druggists, or pharmacists, should possess a practical knowledge of the business and science of pharmacy in all of its relations; therefore,

Be it enacted by the Senate and House of Repesentatives, of the State of Nebraska, and it is hereby enacted by the authority of the same:

Section 1. That there shall be established in the State of Nebraska a Board to be styled the Nebraska State Board of Pharmacy, said Board shall consist of the Attorney General, Secretary of State and Auditor: And said Board shall appoint and choose three examiners or secretaries who shall be skilful retail apothecaries of seven years' practical experience, actually engaged in said business in the State of Nebraska; and said Secretaries shall assist said Board in conducting all examinations hereinafter provided for, and in the performance of any of its duties.

Each of said Secretaries shall receive a compensation of five dollars per day for each days service actually and necessarily performed, and such necessary expenses, as shall be audited and found just and reasonable by said Board for attending the meetings thereof

Provided, that all such services and expenses, and all the necessary expenses of said Board shall be paid out of the moneys received by said Board for fees, all moneys received in excess of said per diem allowance, and other expenses above provided for shall be paid into the State Treasury at the end of each year, and so much thereof as shall be necessary to meet the current expenses of said Board shall be subject to the order thereof, if, in any year the receipts of said Board shall not be equal to its expenses. The Board shall make an annual report and render account to the State Auditor and to the Nebraska State Pharmaceutical Association, of all moneys received and disbursed by it pursuant to this Act. And the State of Nebraska shall in no case be liable for any such compensation or expenses.

And Provided further that said Board shall have the power to discharge any of said Secretaries at any time and to fill any vacancy in the position of Secretary whenever from any cause such vacancy exists.

Sec. 2. The said Board shall within thirty days after its appointment, meet, and organize by the election of a President and Secretary, from its own members, who shall be elected for the term of one year, and until their successors are elected, and shall perform the duties prescribed by the Board. It shall be the duty of the Board to examine all applications for registration submitted in proper form; to grant certificates of registration to such persons as may be entitled to the same under the provisions of this Act;

to investigate complaints and to cause the prosecution of all persons violating its provisions; to report annually to the Governor and to the Nebraska State Pharmaceutical Association upon the condition of Pharmacy in the State, which said report shall also furnish a record of the proceedings of the said Board for the year, and also the names of all Pharmacists duly registered under this Act; the Board shall hold meetings for the examination of applicants for registration, and the transaction of such other business as shall pertain to its duties, at least once in four months, said meeting to be held on the first Tuesdays of March, July and November in each year; and shall make By-laws for the proper fulfilment of its duties under this Act, and shall keep a book of registration in which shall be entered the names and places of business of all persons registered under this Act, which book shall also specify such facts as said persons shall claim to justify their registration. The record of said Board or a copy of any part thereof, certified by the Secretary to be a true copy, attested by the Seal of the Board, shall be accepted as competent evidence in all Courts of the State. Two members of said Board shall constitute a quorum.

SEC. 3. Every person who shall, within three months after this Act takes effect, forward to the Board of Pharmacy satisfactory proof, supported by his affidavit, that he was engaged in the business of a Dispensing Pharmacist on his own account in this State at the time this Act takes effect, in the preparation of physicians' prescriptions, or that at such time he had been employed or engaged three years or more as a Pharmacist in the compounding of physicians' prescriptions, and was at said time so employed in this State, shall, upon the payment to the Board a fee of two dollars, be granted the certificate of Registered Pharmacist: *Provided*, that in case of failure or neglect to register as herein provided, then such person shall, in order to be registered, comply with the requirements provided for registration as a licentiate in pharmacy hereinafter described.

SEC. 4. No person other than a licentiate in pharmacy shall be entitled to registration as a pharmacist, except as provided in section three. Licentiates in pharmacy shall be such persons not less than 18 years of age, who shall have passed a satisfactory examination touching their competency before the Board of Pharmacy. Every such person shall, before an examination is granted, furnish satisfactory evidence that he is of temperate habits, and pay to the Board a fee of three dollars. *Provided*, that in case of the failure of any applicant to pass a satisfactory examination, the money shall be held to his credit for a second examination at any time within one year. The said Board may grant certificates of registration without further examination to the licentiates of such other Boards of Pharmacy as it may deem proper, upon payment of a fee of two dollars.

SEC. 5. The said Board may grant, under such rules and regulations as it may deem proper, at a fee not exceeding one dollar, the certificate of registered assistant, to clerks or assistants in pharmacy, not less than 18 years of age, who at the time this Act takes effect shall be engaged in such service in the State, and have been employed or engaged two years or more in the practice of pharmacy, but such certificates shall not entitle the holder to engage in such business on his own account, or to take charge of or act as manager of a pharmacy or drug store.

SEC. 6. Every registered pharmacist, or registered assistant, who desires to continue the practice of his profession, shall annually, after the expiration of the first year of his registration, during the time he shall continue in such practice, on such date as the Board may determine, pay to the said Board a registration fee to be fixed by the Board, but which shall not exceed one dollar for a pharmacist, or fifty cents for an assistant, for which he shall receive a renewal of said registration. Every person receiving a certificate under this Act shall keep the same conspicuously exposed in his place of business. Every registered pharmacist, or assistant, shall, after changing his place of business or employment, as designated by his certificate, notify the Secretary of the Board of his new place of business. If any pharmacist or registered assistant shall fail or neglect to procure his annual registration, or to comply with the other provisions of this section, his right to act as such pharmacist or assistant shall cease at the expiration of ten days from the time notice of such failure to comply with the provisions of this section shall have been mailed to him by the Secretary of said Board.

SEC. 7. All or any registrations obtained through false representations shall be void, and the Board of Pharmacy may hear complaints and evidence, and may revoke such certificates as it may deem improperly held.

SEC. 8. Any proprietor of a pharmacy who, not being a registered pharmacist, shall, ninety days after this Act takes effect, fail or neglect to place in charge of such pharmacy a registered pharmacist, or any such proprietor who shall by himself, or any other person, permit the compounding or dispensing of prescriptions, or the vending of drugs, medicines, or poisons, in his store or place of business, except by, or in the presence, or in and under the supervision of a registered pharmacist or registered assistant; or any person, not being a registered pharmacist, who shall take charge of or act as manager of such pharmacy or store, or who, not being a registered pharmacist or registered assistant, shall retail, compound, dispense drugs, medicines or poisons, or any person violating any other provision of this act to which no other penalty is herein attached, shall be deemed guilty of a misdemeanor, and for every such offense, upon conviction thereof, shall be punished by a fine of not less than ten nor more than one hundred dollars, and in default of payment thereof, shall be imprisoned not less than ten days, nor more than ninety days, or both such fine and imprisonment, in the discretion of the court.

SEC. 9. Nothing in this Act shall apply to the business of any retail dealer engaged in business at a distance of not less than five miles from the limits of any incorporated village or city, except physicians' prescriptions, or with the vending of the patent or proprietary medicines by any retail dealer, nor with the selling of, by any person, of drugs, medicines,

chemicals, essential oils or tinctures which are put up in bottles, boxes or packages, bearing labels securely affixed, which labels shall bear the name of the pharmacist or druggist putting up the same, the dose that may be administered to persons 3 months, 6 months, or 1 year, 3 years, 5 years, 10 years, 15 years and 21 years of age, and if a poison, the name or names of the most common antidotes; of coperas, borax, blue vitrol, saltpetre, pepper, sulphur, brimstone, Paris green, licorice, sage, senna leaves, castor oil, sweet oil, spirits of turpentine, glycerine, glauber salts, cream tartar, bi-carbonate of soda, sugar of lead, and such acids as are used in coloring and tanning, nor with the selling of paregoric, essence of peppermint, essence of ginger, essence of cinnamon, hive syrup, syrup of ipecac, tincture of arnica, syrup of tulu, syrup of squills, spirits of camphor number six, sweet spirits of nitre, laudanum, quinine, and all other preparations of cinchona bark, tincture of aconite, and tincture of iron, compound cathartic pills, or quinine pills, when such cathartic or quinine pills are compounded by, or put up in bottles or boxes bearing the label of registered pharmacist, with the name of article and directions for its use on each bottle or box, nor with the exclusively wholesale business of any dealer. Nothing in this Act shall prevent a physician from compounding his own prescriptions.

SEC. 10. No person shall add to or remove from any drug, medicine, chemical, pharmaceutical preparation, any ingredient or material for the purpose of adulteration or substitution, which shall deteriorate the quality, commercial value or medicinal effect, or which shall alter the nature or composition of such drug, medicine, chemical, or pharmaceutical preparation, so that it will not correspond to the recognized tests of identity or purity. Any person who shall thus wilfully adulterate or alter, or cause to be adulterated or altered, or shall sell, or offer for sale any such drug, medicine, chemical, or pharmaceutical preparation, or any person who shall substitute, or cause to be substituted, one material for another, with the intention to defraud or deceive the purchaser, shall be guilty of a misdemeanor, and be liable to prosecution under this Act. If convicted he shall be liable to all the costs of the action, and for the first offense be liable to a fine of not less than ten dollars nor more than one hundred dollars, and for each subsequent offense, a fine of not less than twenty-five dollars nor more than one hundred and fifty dollars. On complaint being entered, the Board of Pharmacy is hereby empowered to employ an analyst or chemist, whose duty it shall be to examine into the so-called adulteration, substitution or alteration, and report upon the result of this investigation; and if said report shall be deemed to justify such action, the Board shall duly cause the prosecution of the offender, as provided in this Act.

SEC. 11. All suits for the recovery of the several penalties prescribed in this Act shall be prosecuted in the name of the people of the State of Nebraska, in any court having jurisdiction, and it shall be the duty of the prosecuting attorney of the county where such offense has been committed, to prosecute all persons violating the provisions of this Act, upon proper complaint being made to him.

SEC. 12. The pharmacist of every house dispensing and compounding medicines, registered under this Act, shall be exempt and free from all jury duty in the courts of this State.

SEC. 13. All acts and parts of acts in conflict with the provisions of this Act are hereby repealed.

FOREIGN CORRESPONDENCE

LETTER FROM PARIS.

(FROM OUR OWN CORRESPONDENT.)

Frisch's Report on Pasteur's Method.

La Sémaine Médicale, of January 1, has published a report of Professor von Frisch, of Vienna, on the researches of M. Pasteur on the rabic virus and his method of prophylaxy against rabies, and as the subject is of the highest importance, I reproduce here the conclusions of the Vienna Professor, giving the results of his own researches:

1. In animals which have died from rabies the virus exists in its most concentrated form in the central nervous system (brain and spinal marrow). 2. Small quantities of the cerebro-spinal substance of animals which have died from rabies, injected under the dura mater by trephining, provoke with certainty the same disease in animals infected after a latent period of from fourteen to twenty-one days, which disease may be transmitted from these to other animals. 3. The same disease, with the same symptoms and after the same period of incubation, may be produced in animals by intra-cranial injection with particles of the spinal marrow of human beings who have died of rabies, thus proving the identity of the affection in man and in the lower animals. 4. By the subcutaneous injection of the cerebro-spinal subtance, infection is less sure, and the period of incubation longer, than by intra-cranial infection. 5. The quantity of virus injected under the skin appears to be in an inverse relation with the duration of the period of incubation: the less the quantity injected, the longer is the period of incubation. 6. By the continual intra-cranial transmission of the rabic virus contained in the cerebro-spinal substance of rabbits, one obtains, after a series of generations, a shortening of the period of incubation, irregular at first, but more regular and always increasing later on. 7. The "fixed virus" of a period of incubation of seven days, which M. Pasteur obtains by inoculation from rabbit to rabbit in from forty to fifty generations, surpasses, in intensity, the virus of "street rabies," not only by the more precocious appearance of the disease, but also because the animals, without exception, die from rabies, as well after the subcutaneous injection as by inoculation under the dura mater. 8. The fixed virus does not seem to undergo by ulterior transmissions a notable shortening of the period of incubation, the malady sometimes commencing after six days. On the other hand, the period of incubation of seven days is not constant, as it is sometimes prolonged to eight, ten, and even twelve days. One

may also obtain a period of incubation of from eight to twelve days, and consequently a virus of the same virulence as that of the fixed virus, by the transmission of street rabies, and that occasionally from the second or the third generation. 9. The procedure indicated by M. Pasteur to obtain a fixed virus of a period of incubation of seven days, is perhaps not the only one, as the said virus may sometimes be obtained much earlier, independently of the transmissions, and this virus is constant in its effects and in its period of incubation. 10. The virulence of portions of the spinal marrow diminishes from one day to another by dessication at 20° centigrade over caustic potash, and is completely destroyed after a dessication of twelve or fourteen days. 11. Animals that have been subjected to subcutaneous injections of a series of attenuated inoculations (by more or less lengthened dessication), are rendered refractory to the stronger virus by the previous inoculations with the weaker virus, if the stronger virus have not been used in too rapid succession. 12. Animals which have been inoculated subcutaneously during ten days with virus of progressive virulence (spinal marrow from ten days to one day) have not been refractory to infection with the fresh virus of "street rabies," and have only exceptionally escaped after intra-cranial infection. 13. Rabbits and dogs infected after trephining with the virus of street rabies of sixteen days' incubation have, without exception, succumbed, notwithstanding the preventive treatment already described. 14. M. Pasteur attributed to *the method of slow vaccinations* the unsatisfactory results obtained previously by M. von Frisch, and recommended a more rapid procedure. The experiments carried out conformably to M. Pasteur's instructions have given no favorable results whatever; all the animals died of rabies. 15. These experiments have demonstrated a very important fact: that is, that by the rapid procedure, the weaker spinal marrows do not confer the same certainty of immunity against the stronger ones of a series of dogs and rabbits, which have served as a control experiment, referred to in the preceding paragraph, and in which the rapid process was carried out without previous infection, most of the animals died of rabies. 16. Most of the animals which were submitted to the preventive treatment after subcutaneous inoculation with street rabies, died of the disease, even when the period of incubation was thirty-four days.

M. von Frisch asserts that these experiments show that M. Pasteur's method of rendering animals refractory to rabies is, as yet, not quite certain. There is not yet a sufficient scientific basis for the application in man of a preventive treatment after the bite of a rabid animal. Moreover, it is quite possible that by the preventive treatment itself, at any rate by the rapid procedure recently recommended by M. Pasteur, the malady itself may be transmitted. In taking a glance over what precedes, it will be seen that the conclusions 1, 2, 4, 5, 6, 7, and 10 only concord with those of M. Pasteur. A. B.

DOMESTIC CORRESPONDENCE

COCAINE IN MINOR SURGERY.

Dear Sir:—I desire to give my experience in the use of injections of cocaine in minor surgery, for producing complete local anæsthesia by injecting into the part, through a fine needle, one or two drops of a four per cent. solution of cocaine. For this purpose I use the thinnest steel needle procurable—a very delicate needle sold by Tiemann & Co., which they bill as "Green's."

My experience leads me to think that some of the surgeons using cocaine for local anæsthesia inject more than is necessary. Its local action, as I have observed it, is anæsthetic and anæmic. When injected it causes much more local congestion and irritation of the integument than morphine. It greatly aids morphine to relieve any form of neuralgia, especially facial, and migraine. Is it the hydrochloric acid that chiefly causes the local irritation? Is the plain drug *cocaine* less irritating than the hydrochlorate, benzoate, etc.? I cannot answer from experience. A full dose hypodermically—gr. ss–j, often much less—will cause quite free sweating, and frequently a momentary sense of painless dilatation of the heart, a peculiar feeling, like that sometimes felt in the beginning of syncope. I believe its effects are toxic in most cases when more than one-half grain is given hypodermatically, although the dose, as of other drugs, varies in effect according to temperament, use, state of system, etc.

During the last half year I have several times used, on my own person, for the relief of intense neuralgic pain, Magendie's solution of morphine, to which a four per cent. solution of cocaine was added, the medicine being injected under the skin, as usual. For five minutes or so after each injection an area of two to four inches surrounding the puncture appeared to be quite devoid of sensibility.

On January 2 my partner, Dr. W. A. Cottle, was suffering agonizing pain and inflammation of his forefinger, which he had pricked slightly, with a needle, during an amputation of a gangrenous finger the day before. It was decided to incise the finger, freely, to the bone, to relieve tension, and he sat there dreading the knife, as doctors do, yet too proud to inhale ether. I suggested cocaine, only to be laughed at, but on mentioning my experience was permitted to try it.

Accordingly I injected, near the centre of the ball of the finger, into the skin only, two drops of the cocaine and morphine solution. A moment later the doctor deliberately plunged his bistoury down through the periosteum and cut outwards, making a gash in the skin eight lines in length. He cut as deliberately as he could have if I had been the victim instead of himself, never wincing in the least, and exultingly exclaimed that it did not hurt at all.

With the fine implement above named scarcely any pain is caused by the puncture, which may go through the skin or into it, so that it reach the absorbent vessels. The opening of abscesses and felons, too often postponed from sheer dread of the knife, may thus

be relieved of its terror. It is now known that a small member may be amputated painlessly, without general anæsthesia, by injecting cocaine in two or three places around the limb near the line of incision.

For relief in extracting teeth, cocaine applied to the gums has been generally voted a failure. I would suggest a trial of it by injecting a drop or two into the gum on each side of the tooth, believing it will greatly diminish the pain. Use only the very thin needle named above, for one might as well suffer the operation as the use of such *crow bars* as I have seen physicians employ.

I venture the hope that cocaine may soon be more generally used in this way.

Very respectfully,

ALMON CLARKE, M.D.

Sheboygan, Wis., January 6, 1887.

LOCAL ANÆSTHESIA.

Dear Sir:—In an article in THE JOURNAL of October reference is made to a suggestion of Dr. Franklin H. Martin, of Chicago, who utilizes the properties of the galvanic current discovered by Haertner, who ascertained the valuable fact that particles in solution would, under the influence of a galvanic current, pass through permeable bodies from the positive toward the negative pole of the battery. This important fact caused the writer to experiment on the best mode of applying it so as to produce local anæsthesia and other influences. I think my plan superior to that adopted by Dr. Martin, although the same principle is involved in both.

I draw on the part to be experimented upon a hard-rubber cup of any size, under which I put a piece of light rubber cloth, pierced by a small brass wire, to which is attached, on the under surface, a brass button. Around this I wind cotton-wool, which, being saturated with a ¼ per cent. solution of muriate of cocaine, I place under the cup, and on producing suction the whole appliance is drawn to the part. The rubber cloth, being held by the rim of the cup, makes a nice pressure upon the part to which it is applied. The blood is drawn to it by the suction, and the tissue is thereby made more permeable. The wire is united with the negative pole and the current turned on.

I have in this way produced the most satisfactory results, and at the same time most permanent. Air being excluded from the solution, no evaporation takes place. The appliance is hard to explain without diagrams, but I trust my suggestion will be sufficiently explicit for those who may wish to utilize it. The cup and rubber appliance referred to can be used in many ways in local and surface medication.

Very truly yours, J. W. HARVEY, M.D.

Indianapolis, Ind., December 20, 1886.

MISCELLANEOUS.

TENNESSEE STATE BOARD OF HEALTH.—The Governor of Tennessee pays a well deserved tribute to the State Board of Health. In his annual message he says: "It is my pleasure to call your attention to this important and steadily-growing valuable branch of the State service. During the past two years, under its auspices, there have been organized eighty-two county boards of health, besides securing to each of the large towns in the State an efficient municipal health board, thus bringing the people of the entire State practically under the most intelligent sanitary supervision and administration, which contemplates the remedy, if possible, of all those causes which produce human sickness, and which intensify and facilitate the ravages of all epidemic diseases. Through instructive circulars, which have from time to time been extensively circulated over the State, the State Board of Health has offered to the people valuable suggestions and advice, based upon the latest developments of science, regarding the most approved methods of preventing or restricting the spread of those domestic plagues which in the past have annually left desolate so many homes in Tennessee. Besides which the Board has issued monthly a 'Bulletin' giving the influence of climate upon diseases, together with the prevailing diseases of the State, month by month, and the death-rate per 1000 population so far as under existing law it can do so. In this connection it is not inappropriate to suggest that there is no law in our State now looking to the continuance and proper connection and preservation of the 'vital statistics' of Tennessee. This Board of Health has done, and is calculated to do, much scientific and practical good, and is most efficient as it is now organized."

TOOTH POWDERS.—Prophylactic medicine is of greater value to the public than curative, although they are slow to give it its due; hence the subject of tooth powders may be of some interest. The necessity of keeping the teeth clean, with a view to the prevention of future trouble, is overlooked by too many, even in the higher classes, sometimes from carelessness, sometimes from ignorance. Now, cannot the medical attendant do a great deal to combat this state of things? The dental surgeon is often asked, "How soon should the first tooth-brush be used?" "As soon as there are teeth to use it upon" should be the reply. An ideal tooth powder should be alkaline, since acids dissolve the tooth substance; finely pulverized, that it may not mechanically abrade; antiseptic, to prevent decomposition of food lodged between the teeth, and perhaps to destroy the microbes which are always found choking the tubules of carious dentine; it should contain nothing irritating to the gums; and, lastly, it should be pleasant to the taste, or it will not be used. Fluid dentifrices do not, as a rule, clean the teeth effectually, unless they contain some ingredient which acts upon the enamel itself; and those preparations which are eulogized as making teeth white or preventing the deposit of tartar, should be avoided. Charcoal was at one time a very popular form of dentifrice, and is even now largely used, but from the amount of silica it contains it will rapidly wear away teeth that are not of exceptional hardness; and, moreover, the gums in

some instances become tattooed in a curious manner from absorption of minute particles. Pumice powder, again, is too gritty; and camphorated chalk is said to make the gums spongy. Precipitated chalk forms the best basis for a tooth powder, to the base of which may be added pulv. saponis and ol. eucalypt., a drachm of each; and, if there is no objection to the taste, half a drachm of carbolic acid.—*Lancet*, January 1, 1887.

NECROLOGICAL.—The members of the Council of the New York State Medical Association, while humbly submitting to the decrees of Providence, realize with much grief that the year now closing is made notably sad in the loss by death of so many of their Fellows whose labors have largely contributed to the honor, dignity and usefulness of the medical profession. They now mourn the loss of the second President, Dr. John Perdue Gray, whose aid, wise councils, and personal work have been of such signal service. In common with all the Fellows of the Association, and with the medical profession at large, they sorrow for the death of one who had rendered himself so useful to the State in the guidance of the charitable work in the department of medicine in which he had become a shining light. The Council, therefore, resolved, that the above be published in the forthcoming volume of the Transactions of the Association, and in the medical journals, and that a copy thereof be transmitted to the family of the deceased.

E. D. FERGUSON, Secretary.

January, 1887.

DISINFECTION OF CABS.—At the meeting of the Society of Medical Officers of Health, on Nov. 19, the Council advised the following method of disinfection: The cushion and as much of the internal fittings as are movable should be taken out of the cab and put in a disinfecting oven, where such is available; if there is no disinfecting chamber, the cushions, after having been taken out, if movable, well beaten and dusted, should be replaced, putting them on end so as to expose both surfaces to the action of the chlorine gas which is subsequently used. All exposed woodwork on the inside of the cab should be washed with carbolic acid soap; and carbolized oil should be smeared over the metal work, with the view of disinfecting it, and protecting it from the action of the chlorine. Chlorine gas should be evolved inside the cab, and the cab shut up and kept exposed to the fumes for one hour.—*British Medical Journal*, Jan. 1, 1887.

DR. CHARCOT.—George Augustus Sala says: Dr. Charcot is surely one of the most ingenious of medical mankind. He is a specialist in hysteric and hypnotic cases, and I read that, having satisfied himself as to the practicability of transferring paralysis, nervous contractions, and cataleptic symptoms from one patient to another, he is now about to extend his experiments to hysteric dumbness. "A female patient affected in this manner was placed back to back with a women who had been for a long time cataleptic. By means of the magnet the dumbness was transferred from one patient to the other with the same regularity as marked the experiments in paralysis. By continuing these tests, Dr. Charcot hopes to be able completely to restore speech to tongue-tied patients." The mention of Dr. Charcot's name reminds me that he has written an editorial preface to a book which, artistically, is one of the most extraordinary on which I have ever set my eyes. You know what Sir Charles Bell, what Lebrun, what Darwin and Lavater have done in delineating the passions and emotions of the face; but for a series of terrific pictures illustrating the passions of the body, let me commend you to the "Etudes Cliniques sur l'Hystérie-Epilepsie ou Grand Hysteric," by Dr. Paul Richer, one of Dr. Charcot's pupils. Dr. Richer is an accomplished draughtsman, and his bulky and most appalling volume is embellished with a large number of etchings and woodcuts portraying every conceivable variety of hysterical attitude.

DR. THOMAS E. MCARDLE has been compelled, on account of ill health, to resign the position of Professor of Surgery in the Medical Department of the National University, Washington, D. C., and Dr. Philip T. Harvey, U. S. Army, has been appointed to fill the vacancy.

RUSSIA AND PATENT MEDICINES.—The Russiau Government will prohibit the importation of patent medicines, and the published prohibited list contains more than eight hundred items.

REPORTING OF CONTAGIOUS DISEASES.—The Mayor of Columbus, Ohio, has given notice that for every violation of the law requiring physicians to report contagious diseases he will fine and imprison the offender.

WEEKLY MEDICAL REVIEW.—Dr. B. J. Primm succeeds Dr. Robert Luedeking as associate editor of this journal.

THE BUILDING OF THE COLLEGE OF PHYSICIANS AND SURGEONS, New York, has been sold to an ice-cream firm.

AN ITALIAN HOSPITAL.—The wealthy Italian residents of New York are raising funds for establishing a hospital for Italians.

DR. RAYNER, in the London *Times*, advocates the treatment of mental diseases at general hospitals.

THE UNIVERSITY OF BOLOGNA will celebrate its seventh hundred anniversary in the spring.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 15, 1887, TO JANUARY 21, 1887.

Major W. H. Forwood, Surgeon, ordered for duty at Ft. Meade, Dak. Ter. S. O. 5, Dept. Dak., Jan. 14, 1887.

Major John Brooke, Surgeon, ordered for duty as Post Surgeon at Ft. Monroe, Va. S. O. 10, Div. Atlantic, Jan. 14, 1887.

Major W. H. Gardner, Surgeon, ordered for duty as Post Surgeon at Ft. McHenry, Md. S. O. 10, Div. Atlantic, Jan. 14, 1887.

Major B. F. Pope, Surgeon, ordered for duty at Ft. Clark, Texas. S. O. 15, A. G. O., Jan. 19, 1887.